



PATENT
ATTORNEY DOCKET NO.: 2039279-5013

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES**

In re Reissue Application of:
Jan Hendrik Mensen

U.S. Patent No.: 5,657,600
Issued August 19, 1997

Reissue Application Serial No.: 09/374,598

Filed: August 13, 1999

For: **WEB MEMBER FOR CONCRETE
FORM WALLS**

Examiner: Stephan, B.

Art Unit: 3635

#22

Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

Sir:

APPELLANT'S AMENDED APPEAL BRIEF UNDER 37 C.F.R. § 1.192

Appellant submits this amended appeal brief in support of its Notice of Appeal, filed September 23, 2002, from the final rejection of claims 17-45 in the final Office Action dated March 25, 2002 in the above-identified reissue application. The fee required under 37 C.F.R. § 1.17(c) was filed concurrently with Appellant's original appeal brief filed February 24, 2003. This brief is transmitted in triplicate.

1. THE REAL PARTY IN INTEREST

The real party in interest is ARXX Building Products, Inc., of Cobourg, Ontario, Canada.

2. RELATED APPEALS AND INTERFERENCES

Appellant is not aware of any other appeals or interferences that will directly affect, will be affected by, or will otherwise have a bearing on the decision in this appeal.

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3. **STATUS OF THE CLAIMS**

The status of the claims is as follows:

Claims canceled: None.

Claims withdrawn from consideration but not canceled: None.

Claims pending: 1-45.

Claims allowed: 1-16.

Claims rejected: 17-45.

Claims appealed: 17-45.

4. **STATUS OF AMENDMENTS**

No amendments were filed after the March 25, 2002 Final Office Action.

5. **SUMMARY OF THE INVENTION**

The invention relates to a building component of the type used to construct walls from pourable building material like concrete using form walls constructed from foam insulating material. As explained in the background of invention, building formwork systems of this type had been known in the art well before the filing of the application which issued as the '600 patent. *See* col. 1, ll. 36-39. In these systems, concrete is poured between opposed insulating form panels which remain as permanent parts of the finished wall. *See* col. 1, ll. 40-43. Several examples of such prior art systems are discussed in the '600 patent. This prior art is said to disclose insulating walls connected together by bridging members. *See* cols. 1-2, ll. 68-67, 1-16.

Against this background, the '600 patent discloses examples of the following three aspects of invention that were the subject of claims pursued in the application issuing as the '600 patent: (1) a building component that uses a novel bridging member design to connect the insulating panels; (2) a building component in which one of the panels is used to construct a shelf for supporting a finishing material such as bricks; and (3) a building component that includes structure for mating with a complimentary end

part of a second building component to facilitate construction of walls connected at irregular angles (e.g., greater or less than 90 degrees). Claims 17-44 are directed to the bridging member and supporting shelf aspects of invention while claim 45 is directed to a different aspect of invention overlooked during the original prosecution, namely, an insulated wall. The subject matter covered in the claims on appeal and the portions of the specification relating to this subject matter are summarized below.

Building Component and Bridging Member Claims

Claim 23 is directed to the sub-combination of a bridging member, per se, while claims 17-22 and 42, are directed to a building component including the combination of at least two bridging members, and first and second insulating foam panels connected by the bridging members. Examples of such a building component and/or bridging member are illustrated in FIGS. 4-7 and described in cols. 4-5, ll. 3-67, 1-49 of the '600 patent.

Supporting Shelf Claims

Claims 24-40 and 43 are directed to a building component that includes at least two bridging members extending between and connecting first and second opposed insulating panels wherein a first one of the panels extends at an obtuse angle with respect to the vertical to define a supporting shelf. Examples of such a building component are illustrated in FIGS. 8-10 and described in cols. 5-6, ll. 50-67, 1-27 of the '600 patent.

Combination Bridging Member and Supporting Shelf Claims

Claims 41 and 44 are directed to a building component that includes the combination of the bridging members of claim 23 and the supporting shelf of claim 24.

Insulated Wall Claim

Claim 45 is directed to an insulated wall. An example of such a wall is illustrated in FIG. 17 and described in cols. 5-6, ll. 50-67 and 1-27 of the '600 patent.

6. ISSUES

In this reissue application for U.S. Pat. No. 5,567,600 (“‘600 patent”), the issue is whether reissue claims 17-45 attempt to recapture surrendered subject matter in violation of the Recapture Rule. After the reissue application was allowed, the PTO asked for surrender of the original patent and Applicant filed a Statement of Loss of Original Patent. The PTO then re-opened prosecution on the merits and alleged a new ground of rejection based upon recapture. *See* 8/30/2001 Office Action in Application No. 09/374,598. The sole basis alleged by the PTO for recapture is Applicant’s failure to substantively rebut one alleged interpretation of an ambiguous Examiner’s Reasons for Allowance made during the original prosecution of the application issuing as the ‘600 patent. A copy of reissue claims 17-45 and the ‘600 patent are attached as **APPENDIX 1** and **APPENDIX 2**, respectively.

7. GROUPING OF CLAIMS

Claims 17-45 include 8 independent claims (17, 23, 24, 41, 42, 43, 44 and 45) and numerous claims dependent upon some of the independents. Not all of the claims stand or fall together for purposes of this appeal, although several arguments made in the argument section are applicable to all claims, as indicated by the headings in that section. In particular, for purposes of this appeal, there are four separately patentable groups of claims:

Group 1: Claims 17-23 and 42, directed to the details of the novel bridging member design, either alone or in combination with a building component. Claims 17, 23 and 42 in this group are independent.

Group 2: Claims 24-40 and 43, directed to a building component defining a supporting shelf. Claims 24 and 43 in this group are independent.

Group 3: Independent claims 41 and 44, directed to a building component having the details of the novel bridging member design and also defining a supporting shelf.

Group 4: Independent claim 45, directed to an insulating wall including first and second building components, a wall and a finger formed by building material defining, in part, a supporting shelf.

The argument section below indicates which arguments are applicable to which groups are why they are separately patentable for purposes of this appeal.

8. ARGUMENT

The claims stand rejected pursuant to the PTO's new policy directive for examination of broadening reissue applications, which notably was adopted *after* this reissue application was filed. *See* Memorandum from the Deputy Assistant Commissioner for Patent Policy and Projects Stephan G. Kunin to the Patent Examiner Corps, *Applying the Recapture Rule to Reissue Applications*, September 21, 1999, attached as **APPENDIX 3**. In this case, pursuant to this new policy, the PTO relies solely upon an Examiner's Statement of Reasons for Allowance in the prosecution history of the '600 patent to reject reissue claims 17-45. *See* 3/25/2002 Office Action in Application No. 09/374,598. This Statement of Reasons For Allowance (hereinafter "RFA") was received in a 12/27/1995 Office Action in parent Application No. 08/262,505, and for convenience is reproduced below:

No prior art of record shows a building component comprising two parallel panels connected by a bridging member as claimed, one of the panels having a top substantially thicker than the bottom, the outer surface extending upwardly and outwardly from the bottom, and the inner surface of the thicker part is partially cut away, and the panels connected by end parts as shown in Figure 11.

Due to the highly confusing and ambiguous nature of this RFA, with its run on sentence structure apparently referring to patentably distinct and independent claim sets having different limitations in one fell swoop, Applicant submitted a response to the RFA to clarify the record. In particular, Applicant stated that the "record should reflect that the statement for reasons for allowance clearly is referring to the features of both claims 13 and 22, and all of these features collectively are not required for patentability." 3/27/1996 Amendment in parent Application No. 08/262,505 (emphasis in the original). Thus, the response to the RFA reflects Applicant's view of the RFA as being potentially subject to misinterpretation when viewed in isolation from the remainder of the file history.

By not responding to any other aspects of this highly confused and contorted RFA, Applicant did not waive objection to, or acquiesce in, other possible interpretations of the RFA, such as the one now posited by the PTO in this application. As explained in Section C herein, the safe harbor afforded by Rule 104(e) in effect at the time explicitly states that an Applicant does not risk any adverse inferences by not responding to an RFA. Moreover, when viewed correctly, as explained in detail in Section D herein, the RFA merely effectively restates all limitations in allowed independent claims 1, 12, 13 and 16 as being important, and does not emphasize any one limitation over the other. Therefore, no recapture issues are raised by the RFA.

The only grounds of rejection made by the PTO and at issue in this appeal are based on alleged recapture due to the above RFA. The claims were not amended in any manner, nor were any arguments presented in the parent file history that are relevant to the recapture issues presented in this appeal.

Applicant requests reversal of the rejections of claims 17-45 for at least the reasons set forth below.

A. The PTO Policy for Determining Recapture Questions Improperly
Focuses All Attention on whether the Applicant submits a Response to the
Reasons for Allowance

(1) Groups 1-4 (Claims 17-45)

Controlling Federal Circuit precedent states that a reissue claim is invalid under the recapture rule if the broadened subject matter of the reissue claim relates to subject matter surrendered during prosecution and the claim is not materially narrowed in other respects. *See e.g., Hester Industries v. Stein, Inc.*, 142 F.3d 1472, 1480-1484 (Fed. Cir. 1998); *Pannu v. Storz Instruments, Inc.*, 258 F.3d 1366, 1371 (Fed. Cir. 2001). Under this precedent, the question of whether an Applicant is attempting to recapture subject matter that was surrendered during original prosecution depends upon the arguments and/or claim amendments made by the Applicant. *See e.g., Hester*, 142 F.3d 1472, 1480-1484; *Pannu*, 258 F.3d 1366, 1371.

During the Examiner's interview of February 26, 2002, Applicant's representative was informed that the current PTO policy mandates that Applicant's arguments during the original prosecution are irrelevant and can be ignored, if Applicant failed to substantively respond to an examiner's reasons for allowance that allegedly reflects a surrender of subject matter by the Applicant. This aspect of the PTO's Reissue Policy directly conflicts with controlling Federal Circuit precedent, which states that when deciding issues of disclaimer of subject matter by an applicant, it is the "totality of the prosecution history that must be assessed." *See Elkay Mfg. Co. v. Ebco Mfg. Co.*, 52 USPQ2d 1109, 1113 (Fed. Cir. 1999), *cert. denied*, 529 U.S. 1066 (2000); *Rheox, Inc. v. Entact, Inc.*, 61 USPQ2d 1368, 1373 (Fed. Cir. 2002); *Hockerson-Halberstadt, Inc. v. Avia Group Intern., Inc.*, 55 USPQ2d 1487, 1491-92 (Fed. Cir. 2000); *Allen Engineering Corp. v. Bartell Industries, Inc.*, 299 F.3d 1336, 1350 (Fed. Cir. 2002).

In the context of reissue recapture, the district court decision in *Dethmers Manufacturing Co. v. Automatic Equip. Mfg*, 23 F. Supp. 2d 974 (ND Iowa 1998), *aff'd on other grounds*, 272 F.3d 1365 (Fed. Cir. 2001), is illustrative of how these principles apply and how the file history, as a whole, cannot be ignored. In *Dethmers*, the question of recapture of surrendered subject matter was decided in favor of the patentee after a review of *both* the RFA *and* applicant's

responses to the examiner's office action. The court's ultimate decision as to whether the recapture rule was violated rested on the content of an official action and applicant's response thereto. Notably, the Court found that there was no recapture, notwithstanding the fact that the reissue claim deleted a limitation included in the RFA.

Thus, even if the case law does suggest that an RFA could be an appropriate source of evidence relevant to whether the Applicant has surrendered subject matter, the case law clearly does not support the PTO's novel position that an RFA *alone* can indicate surrendered subject matter regardless of the arguments Applicant made in the file history. There is no support in the case law for this newly-minted, bright line rule the PTO is attempting to impose on Applicant.

B. The rejections of the claims improperly applies the Recapture Rule because the rejections do not take into account statements by the Applicant during prosecution

(1) Groups 1-4 (Claims 17-45)

In the present case, no statements made by the Applicant in the file history were considered by the PTO to be relevant to the question of alleged surrendered subject matter. The Office Action merely states that "because of the reasons for allowance in the parent application there is recapture." Indeed, during the Examiner's interview of February 26, 2002 it was confirmed that any statements by Applicant were deemed irrelevant to the question of surrender of subject matter because, according to the PTO, the Applicant did not rebut the RFA. Such an interpretation of the Federal Circuit's test for recapture is erroneous, as a matter of law. Applicant respectfully traverses the rejection of claims 17-45 under the recapture rule because the rejection does not satisfy the case law requirements that an alleged surrender of subject matter by the Applicant be supported by arguments and/or claim amendments by the Applicant. In this case the claims were not amended and the PTO points to no file history supporting the alleged recapture. Accordingly, the rejection does not establish a *prima facie* case and must be withdrawn.

C. Even assuming arguendo the PTO's view of the case law is correct, it cannot retroactively apply to this case

(1) Groups 1-4 (Claims 17-45)

The patent at issue in this reissue application is U.S. Pat. No. 5,567,600, which issued in August 1997 from Application No. 262,505, which was filed June 20, 1994 (hereinafter the "505 application"). When the RFA was received by the Applicant in 1995, the applicable PTO regulation stated, in pertinent part:

If the examiner believes that the record of the prosecution as a whole does not make clear his or her reasons for allowing a claim or claims, the examiner may set forth such reasoning. . . The applicant or patent owner may file a statement commenting on the reasons for allowance within such time as may be specified by the examiner. Failure to file such a statement shall not give rise to any implication that the applicant or patent owner agrees with or acquiesces in the reasoning of the examiner.

37 C.F.R. § 104(e) (emphasis added). Yet, the present rejection relies upon the presumption that the Applicant agreed with the Examiner's reasoning because the Applicant did not substantively rebut the Examiner's reasons for allowance. In the present case, no such presumption can be inferred because the current version of 37 C.F.R. § 104(e), which deletes the last sentence in the former rule, was not effective until September 7, 2000, when the Patent Business Goals Act was implemented. See 65 Fed. Reg. 54,633. Indeed, even the September 21, 1999 Memorandum from the Deputy Assistant Commissioner for Patent Policy and Projects Stephan G. Kunin to the Patent Examiner Corps, *Applying the Recapture Rule to Reissue Applications*, was not adopted until *after* this reissue application was filed. Hence, even assuming *arguendo* that the policy in the Reissue memo is legally correct, the PTO rejection of claims 17-45 is improper, unfair and must be reversed because it relies upon a retroactive application of the new provisions of 37 C.F.R. § 104(e), which were not in effect during original prosecution. Accordingly, Applicant respectfully requests that the recapture rejection be withdrawn for this independent reason based upon the principles of fairness and equity.

Moreover, the law requires that a surrender of subject matter cannot be based on “equivocal” statements by the Applicant. *See e.g., Hester*. Applicant viewed the RFA as mismatching, in an ambiguous and contorted way, all of the limitations of two distinct and independent inventions. Applicant attempted to clarify the record in its response to the RFA. Yet, the PTO’s position appears to be that any resemblance of a claim limitation appearing under the heading “Examiner’s Reasons for Allowance” amounts to an unequivocal surrender of subject matter, regardless of whether the statement makes any sense in light of the prosecution history. Here, the PTO seeks to establish disclaimer based solely on a non-response to a statement by the Examiner that bears no resemblance to the remainder of the prosecution history, makes no sense in light of the claim structure and/or block quotes all limitations in the claims, and was received at a time when the rules of practice did not place any burden on Applicant to insist that an Examiner correct a nonsequitur RFA. In these circumstances, failure to respond substantively to the Examiner’s RFA in this case cannot amount to an unequivocal statement of acquiescence in the Examiner’s reasons for patentability (assuming, *arguendo*, that such a reasoning is actually articulated in the RFA) under the applicable PTO rules in force at the time. For this additional reason, Applicant traverses the rejections under the recapture rule.

D. The PTO rationale for rejecting the claims in this case contravenes the logic of the recapture rule

Two of the primary reasons for the recapture rule are (1) that a patentee should be bound to deliberate assertions made in order to obtain allowance, and (2) fairness to the public who rely upon the unmistakable assertions by the Applicant in support of patentability. *See e.g., Hester*. The necessary predicate to these policies is that a file history actually articulates a limitation in the claim or feature of the invention that the public can identify as the patentable distinction over the art, i.e., a limitation or feature that is more important than the other limitations of the claim. Absent evidence of reliance upon a particular limitation or feature by the Applicant, all limitations are deemed to be equally material under the law.

(1) *Group 1: Claims 17-23 and 42*
Group 3: Claims 41, 44

With respect to claims 17-23 and 41, 42 and 44, the PTO recapture rejection relies on the following statement in the RFA as alleged evidence of surrendered subject matter: “two parallel panels connected by a bridging member as claimed.” It is undisputed that bridging members and parallel panels are notoriously well known in the art, as is the combination of the two elements. Indeed, in the context of building components, the presence of bridging members necessarily means that panels are in some way involved since one of the functions of a bridging member is to connect a pair of panels. When viewed in this light, the PTO’s belief that the statement “two parallel panels connected by a bridging member as claimed” evidences a surrender of subject matter defies common sense. One of ordinary skill in the art reading the RFA cannot conclude that there is any particular limitation or feature in the claims that is of more importance to patentability than any other limitation or feature in the claims. The RFA does nothing more than inform the reader that the claims relate to two well-known concepts in the building component art. Indeed, the PTO’s reliance on “two parallel panels connected by a bridging member as claimed” as purported evidence of surrendered subject matter is tantamount to concluding that a RFA that simply block-quotes an entire claim evidences a surrender sufficient to prevent recapture of any limitation.

Stated another way, the statement “two parallel panels connected by a bridging member as claimed” does not evidence surrender of subject matter because it merely serves as a shorthand way of incorporating all of the limitations of the claims into the RFA. During the Examiner’s interview, Examiner Dorner suggested that an RFA that simply block quotes an entire claim cannot be used as a basis for rejecting claims under the recapture rule. We agree with Examiner Dorner. However, Examiner Dorner took the view that the phrase “two parallel panels connected by a bridging member as claimed” refers to specific limitations in the claims. Applicant respectfully disagrees with this conclusion and requests reversal because the statement, when properly viewed from the perspective of one of ordinary skill in the art, merely accords equal weight to each claim limitation in the claims. Thus, the public cannot identify

from this statement one limitation in the claims that is of any more importance to patentability than any other limitation in the claims. “Although prosecution history can be a useful tool for interpreting claim terms, it cannot be used to limit the scope of a claim unless the applicant took a position before the PTO that would lead a competitor to believe that the applicant had disavowed coverage of the *relevant* subject matter.” *Schwing GmbH v. Putzmeister Aktiengesellschaft*, 64 USPQ2d 1641, 1645 (Fed. Cir. 2002) (emphasis added); *see also Pharmacia & Upjohn Co. v. Mylan Pharmaceuticals, Inc.*, 50 USPQ2d 1033, 1036 (Fed. Cir. 1999). For this additional reason, the rejections of claims 17-23 and 41, 42, and 44, and all the claims that depend therefrom, under the recapture rule are additionally erroneous and should be reversed.

(2) *Group 2: Claims 24-40, 43*
 Group 3: Claims 41, 44

With respect to claims 24-41, and 43-44, the first and second “clauses” of the RFA are applicable because original claim 13 recites the panels, bridging members and wherein clause limitations. Hence, the PTO relies upon the RFA’s recitation of essentially every element in claim 13 of the ‘600 patent as evidence of alleged surrendered subject matter. As noted above, a RFA that block quotes an entire claim cannot evidence surrendered subject matter since every limitation in the claim is given equal weight by this statement. For this additional reason, the rejections of claims 24-41 and 43-44 under the recapture rule is additionally erroneous and should be reversed.

E. Recapture is not present under a correct interpretation of the case law

Even if the PTO were to properly apply the case law in the present case, Applicant's reissue claims 17-45 do not recapture surrendered subject matter in violation of the Recapture Rule. During the original prosecution, Applicant's originally filed claims were initially rejected. Applicant then submitted a response traversing the rejections without amendments to the claims. In a subsequent office action, the Examiner allowed claims 1-16.

- (1) *Group 1: Claims 17-23 and 42*
Group 3: Claims 41, 44

In the response to the Examiner's first office action, Applicant discussed the distinctions of the claimed building component and/or bridging member (issued claims 1-12) and brickshelf (issued claims 13-16) over the prior art. *See* 9/25/1995 Amendment in Application No. 08/262,505. In regard to claims 1-12, Applicant discussed the advantages of the particular shape of the bridging member in defining over the art. *See id.* at pgs. 2-6. Reissue claims 17-23 and 41-42 and 44 retain all of the distinctions referred to in the Applicant's response to the Examiner's first office action. For at least this reason, there is no surrender of subject matter for reissue claims 17-23, 41-42, and 44.

- (2) *Group 2: Claims 24-40, 43*
Group 3: Claims 41, 44

As for claims 13-16, Applicant's response to the Examiner's office action addressed the prior art rejection based on U.S. Pat. No. 2,911,818 to *Smith*. *See Id.* at pgs. 6-8. This patent teaches using concrete blocks. In traversing this rejection, Applicant pointed to the clear distinction between a concrete block supporting, e.g., a brickshelf, and the plastic forming panels in the claims. *See id.* at pgs. 6-7. Applicant's reissue claims 24-41 and 43-44 retain the same limitations of a plastic forming panel having sufficient strength for supporting, e.g., a brickwall, that were argued by the Applicant during the original prosecution. For at least this reason, there is no recapture of surrendered subject matter for reissue claims 24-41 and 43-44.

*F. Group 4: Claim 45 is Directed to an Aspect of Invention Overlooked
During Original Prosecution and Does Not Implicate the Recapture Rule*

Controlling Federal Circuit precedent provides that the Recapture Rule does not apply to a reissue claim that is materially narrower in other, overlooked aspects of the invention, despite the fact that the claim excludes limitations allegedly surrendered during prosecution. *See e.g., Hester* at 1482-83. Claim 45 is such a claim.

This claim is directed to an insulated wall, as opposed to the building components of claims 1-44. This wall includes first and second building components, the first component defining a first space and the second component defining a second space and a cavity, and a wall and finger formed by the building material. Thus, unlike the claims pursued in the application issuing as the '600 patent (i.e., building components and a bridging member used to form walls), claim 45 is directed to the completed wall. Accordingly, Applicant should be entitled to this scope of protection as claim 45 contains materially narrower limitations directed to other aspects of this invention not originally claimed. For this additional reason, the rejection of claim 45 under the Recapture Rule is erroneous and should be reversed.

CONCLUSION

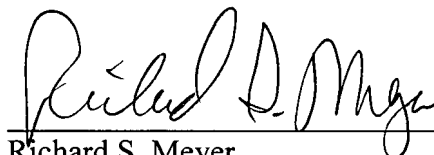
In view of the foregoing, Applicant respectfully request reversal of the Examiner's rejections and allowance of the pending claims as there has been no attempt to recapture surrendered subject matter under a correct interpretation of the Recapture Rule.

EXCEPT for issue fees payable under § 1.18, the Commissioner is hereby authorized by this paper to charge any additional fees during the entire pendency of this application including fees due under 37 C.F.R. §§ 1.16 and 1.17 which may be required, including any required extension of time fees, or credit overpayment to Deposit Account No. 23-1951. This paragraph is intended to be a **CONSTRUCTION PETITION FOR EXTENSION OF TIME** in accordance with 37 C.F.R. § 1.136(a)(3).

Respectfully submitted,
MCGUIREWOODS LLP

Date: July 21, 2003

By:



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CLAIMS ON APPEAL

17. A building component comprising:
first and second insulating foam panels arranged to define therebetween a space for receiving pourable building material; and
at least two bridging members extending between and connecting said panels, each bridging member comprising:
a pair of end plates;
a thin narrow strip member joining the mid-areas of said end plates;
a series of first narrow bracing members extending from positions adjacent a mid-point of said narrow strip member to positions spaced a short distance from the ends of said end plates; and
a series of second narrow bracing members extending from positions on said first bracing members to positions on said strip member intermediate said plates and said mid-point of said strip member.
18. The building component of claim 17, wherein said end plates are elongated and are orientated substantially vertically.
19. The building component of claim 17, wherein said end plates extend substantially from a top end to a bottom end of said panels.
20. The building component of claim 17, wherein said pair of end plates abut against outer surfaces of said panels.
21. The building component of claim 17, wherein said bridging members are molded into said panels.

22. The building component of claim 17, wherein each of said bridging members further comprises first and second transverse stiffeners extending vertically along said bridging member and substantially flush with inner surfaces of said first and second panels.

23. A bridging member for connecting opposed foam panels of an insulated concrete form wall, said bridging member comprising:

- a pair of end plates;

- a thin narrow strip member joining the mid-areas of said end plates;

- a series of first narrow bracing members extending from positions adjacent a mid-point of said narrow strip member to positions spaced a short distance from the ends of said end plates; and

- a series of second narrow bracing members extending from positions on said first bracing members to positions on said strip member intermediate said plates and said mid-point of said strip member.

24. A building component comprising:

- first and second insulating foam panels each having inner and outer surfaces, a top and a bottom, said panels being arranged to define a space therebetween for receiving pourable building material;

- at least two bridging members extending between and connecting said panels; and

- wherein said first panel extends at an obtuse angle with respect to the vertical to define a supporting shelf.

25. The building component of claim 24 wherein said outer surface of said first panel includes a lower vertical part, an upper vertical part, and an intermediate part connecting said lower and upper parts, said intermediate part being angled relative to said vertical parts.

26. The building component of claim 24 wherein said top of said first panel is substantially

thicker than said bottom thereof, said outer surface of said first panel is profiled to extend outwardly and upwardly from said bottom thereof to said top thereof, and wherein said inner surface of said top is partially cut away in areas spaced from said bridging members of said first panel.

27. The building component of claim 26 wherein said cut away parts follow the profile of, but are spaced from, said outer surface of said first panel.

28. The building component of claim 24, wherein said first panel further includes at least two members extending inwardly from said first panel inner surface, each of said extending members having a top portion, a bottom portion and an intermediate portion extending therebetween, said top portion being substantially thicker than said bottom portion.

29. The building component of claim 28, wherein said extending members comprise partitions connected with said first panel.

30. The building component of claim 29, wherein said partitions are integrally formed from insulating foam material with said first panel.

31. The building component of claim 28, wherein each of said bridging members include a first end connected to one of said extending members and a second end connected to said second panel.

32. The building component of claim 28, wherein each of said bridging members include a pair of end plates, with a first one of said end plates being molded into one of said extending members and a second one of said end plates being molded into said second panel.

33. The building component of claim 32, wherein each of said end plates abuts the outer

surface of one of said first and second panels.

34. The building component of claim 24, wherein said bridging members are molded into said first and second panels.

35. The building component of claim 24, wherein said bridging members including a pair of end plates, wherein each of said end plates abuts the outer surface of one of said first and second panels.

36. The building component of claim 24, wherein said bridging members are formed integrally from one piece of material.

37. The building component of claim 24, wherein said bridging members are disposed symmetrically about a vertical axis.

38. The building component of claim 28, wherein said top portions of said extending members define at least a portion of said supporting shelf.

39. The building component of claim 24, wherein said supporting shelf includes a top surface of building material received within said space.

40. The building component of claim 24, wherein the building material received within said space defines a vertical wall portion integral with said supporting shelf.

41. A building component comprising:
first and second insulating foam panels arranged to define therebetween a space for receiving pourable building material, and

at least two bridging members extending between and connecting said panels, each bridging member comprising:

- a pair of end plates;
- a thin narrow strip member joining the mid-areas of said end plates;
- a series of first narrow bracing members extending from positions adjacent a mid-point of said narrow strip member to positions spaced a short distance from the ends of said end plates;
- a series of second narrow bracing members extending from positions on said first bracing members to positions on said strip member intermediate said end plates and said mid-point of said strip member; and

wherein said first panel extends at an obtuse angle with respect to the vertical to define a supporting shelf.

42. A building component comprising:

first and second insulating foam panels arranged in spaced parallel relationship to define therebetween a space for receiving pourable building material, and

at least two bridging members extending between and connecting said panels, each bridging member comprising:

- a pair of end plates;
- a thin narrow strip member joining the mid-areas of said end plates;
- a series of first narrow bracing members extending from positions adjacent a mid-point of said narrow strip member to positions spaced a short distance from the ends of said end plates;

and

a series of second narrow bracing members extending from positions on said first bracing members to positions on said strip member intermediate said plates and said mid-point of said strip member.

43. A building component comprising:

first and second high density foam panels each having inner and outer surfaces, a top and a bottom, said panels arranged to define a space therebetween for receiving pourable building material,

at least two partitions extending from said inner surface of said first panel to form cavities integral with said space, each partition comprising a bridging member extending between and connecting said panels; and

wherein said first panel extends at an obtuse angle with respect to the vertical such that building material poured into said space flows into said cavities to form with said first panel a supporting shelf.

44. A building component comprising:

first and second insulating foam panels arranged in spaced parallel relationship to define therebetween a space for receiving pourable building material, and

at least two bridging members extending between and connecting said panels, each bridging member comprising:

a pair of end plates;

a thin narrow strip member joining the mid-areas of said end plates;

a series of first narrow bracing members extending from positions adjacent a mid-point of said narrow strip member to positions spaced a short distance from the ends of said end plates; and

a series of second narrow bracing members extending from positions on said first bracing members to positions on said strip member intermediate said plates and said mid-point of said strip member;

wherein said first panel extends at an obtuse angle with respect to the vertical to define a supporting shelf.

45. An insulated wall formed from a pourable building material, said wall comprising:

a first building component having a top and bottom and including first and second foam panels each having inner surfaces, said first and second panels arranged in spaced parallel relationship defining a first space having a first width for receiving pourable building material, and at least two first bridging members extending between and connecting said first and second panels;

a second building component having a top and bottom and including third and fourth foam panels each having a panel thickness, at least two panel connecting partitions extending inwardly from said third panel, at least two second bridging members extending between and connecting said third panel to said fourth panel through said panel connecting partitions, and wherein said third panel extends at an obtuse angle with respect to the vertical and defines with said fourth panel a second space in fluid communication with said first space, and said second space includes a cavity defined by said third panel and said partitions, said cavity having a width at the top thereof that is substantially greater than the panel thickness at the bottom of said third panel;

a wall having a width approximately equal to the first width and formed by building material received in said first and second spaces; and

a finger formed by building material received in said cavity, said finger defining with said third panel a supporting shelf, and said shelf being integral with said wall.



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(2)

United States Patent [19]

Mensen

[11] Patent Number: **5,657,600**[45] Date of Patent: **Aug. 19, 1997**[54] **WEB MEMBER FOR CONCRETE FORM WALLS**[75] Inventor: **Jan Hendrik Mensen**, Cobourg,
Canada[73] Assignee: **AAB Building Systems Inc.**, Cobourg,
Canada

1182304	2/1985	Canada
1194706	10/1985	Canada
1209364	8/1986	Canada
1233042	2/1988	Canada
1234701	4/1988	Canada
1244668	11/1988	Canada
1303377	6/1992	Canada
1304952	7/1992	Canada
1384868	11/1964	France

52/606[21] Appl. No.: **262,505**[22] Filed: **Jun. 20, 1994**[51] Int. Cl.⁶ **E04B 2/00**[52] U.S. Cl. **52/426; 52/309.12**[58] Field of Search **52/426, 564, 309.11,
52/309.12, 562, 592.1, 606, 609; 446/102,
107. 85**[56] **References Cited****U.S. PATENT DOCUMENTS**

2,911,818	11/1959	Smith	52/606
3,286,428	11/1966	Kay	52/496
4,698,947	10/1987	McKay	52/309.12
4,730,422	3/1988	Young	52/105
4,765,109	8/1988	Boeshart	52/426
4,866,891	9/1989	Young	52/426 X
4,879,855	11/1989	Berrenberg	52/309.11
4,884,382	12/1989	Harobin	52/426
4,889,310	12/1989	Boeshart	52/426 X
4,894,969	1/1990	Harobin	52/426 X
4,936,540	6/1990	Boeshart	52/426 X
4,938,449	7/1990	Boeshart	52/426 X
5,003,746	4/1991	Wilston	52/592.1
5,107,648	4/1992	Roby	52/426 X
5,154,032	10/1992	Ritter	52/592.1
5,390,459	2/1995	Mensen	52/426

FOREIGN PATENT DOCUMENTS

826584	11/1969	Canada
1145584	5/1983	Canada

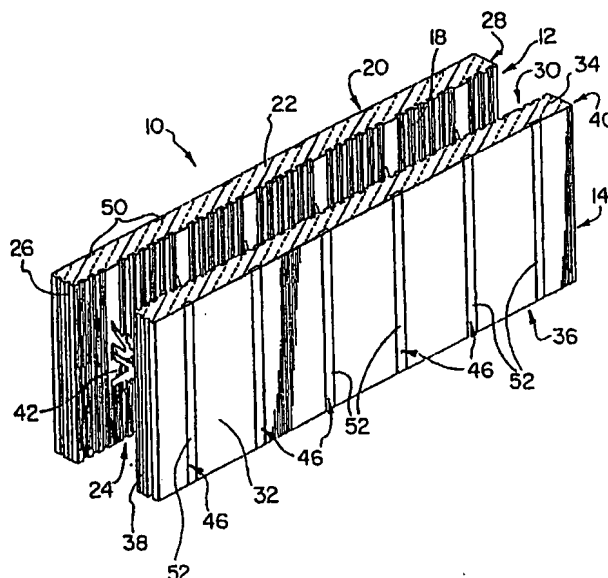
OTHER PUBLICATIONSBrochure "The Ice Block"; W.A.M. Inc., 206 Main,
Maquoketa, Iowa 52060.Brochure "Consulwal"; Consulwal, 2668 Mt. Albert Rd.
Ed., R.R. #1, Queensville, Ontario, Canada, L0G 1R0.

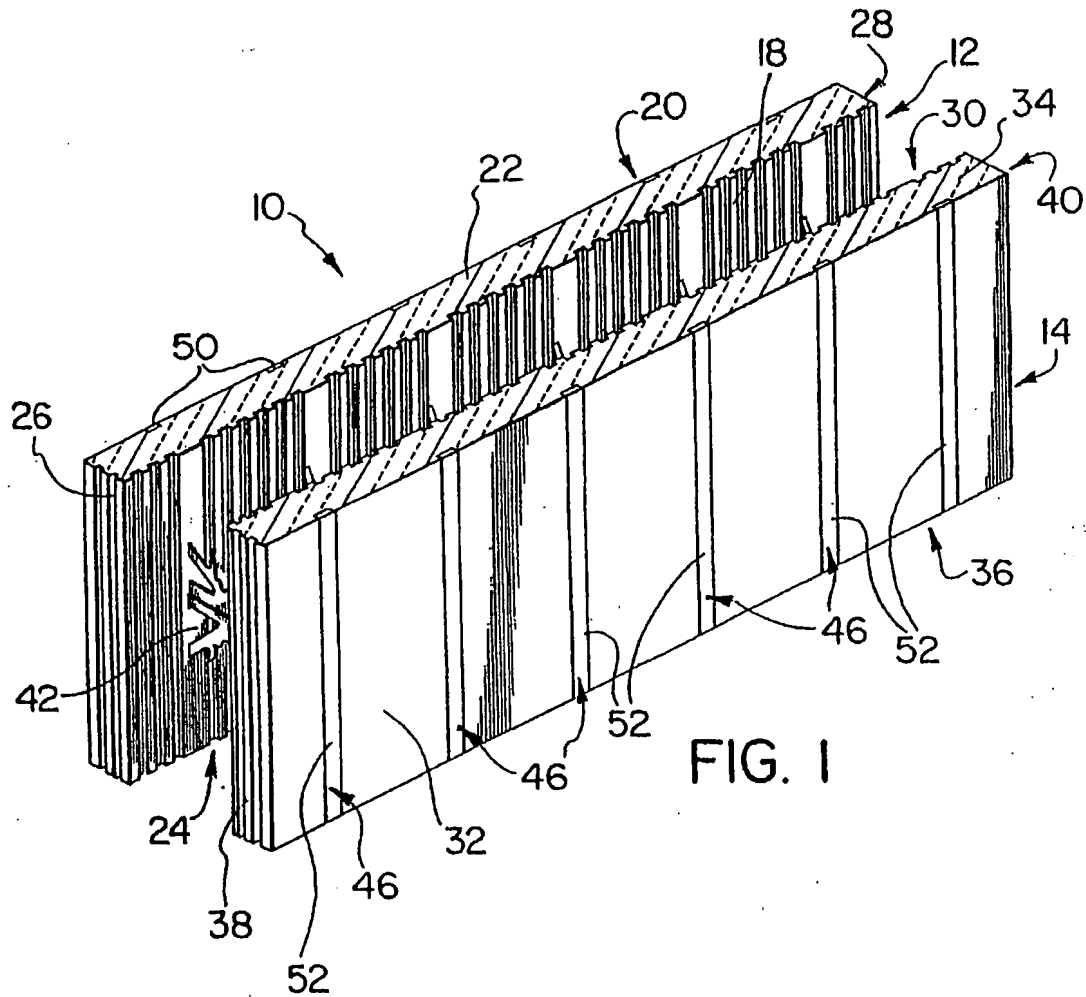
Primary Examiner—Wynn E. Wood

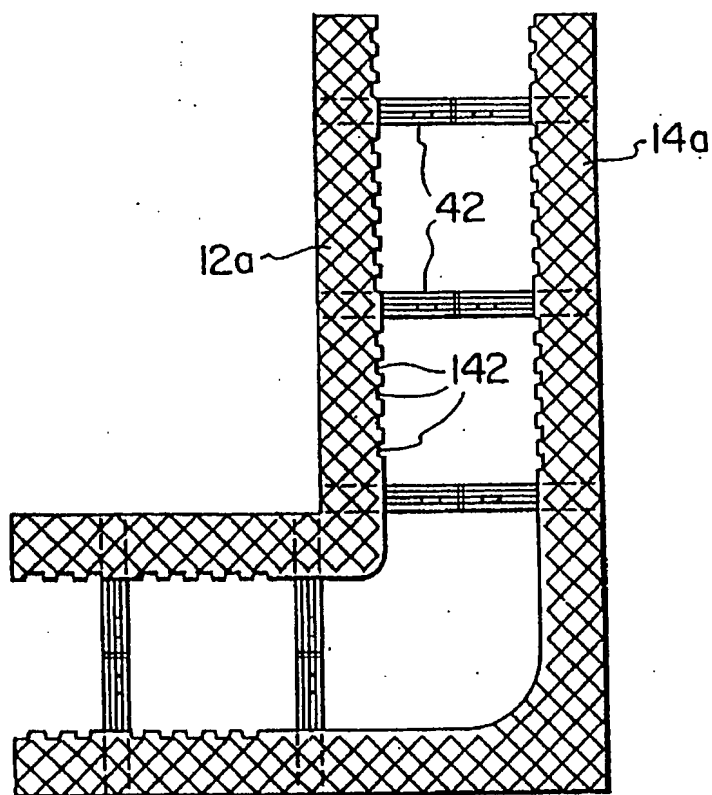
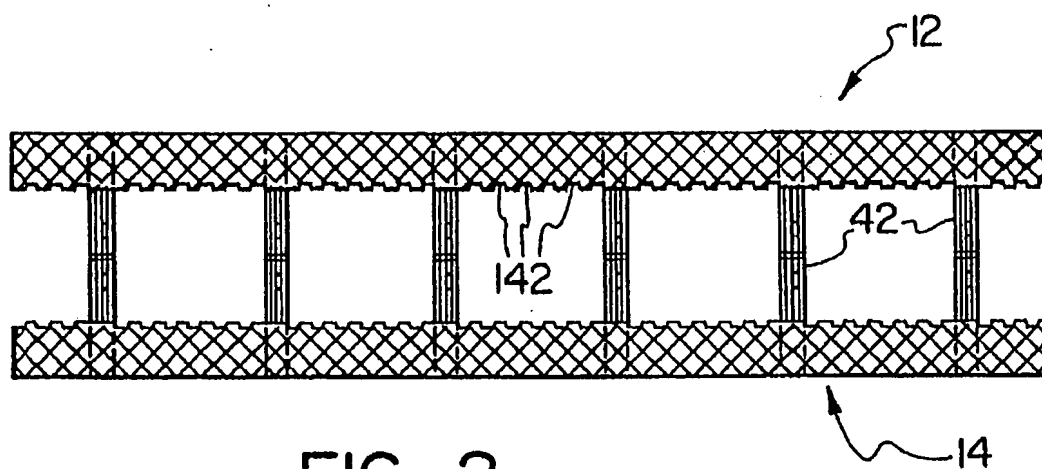
Assistant Examiner—Beth Aubrey

Attorney, Agent, or Firm—Morgan, Lewis and Bockius
LLP; Richard S. Meyer[57] **ABSTRACT**

The invention provides a building component comprising first and second high density foam panels each having inner and outer surfaces, top and bottom, and first and second ends, the panels arranged in spaced parallel relationship with their inner surfaces facing each other, and at least two bridging members extending between and through and molded into the panel members. Each bridging member comprises a pair of elongated end plates oriented vertically and abutting against the outer surfaces of the panels; a thin narrow strip member joining the mid-areas of the end plates; a series of first narrow bracing members extending from positions adjacent a mid-point of the narrow strip member to positions spaced a short distance from the ends of the end plates; and a series of second narrow bracing members extending from positions on the first bracing members to positions on the strip member intermediate the plates and the mid-point of the strip member.

16 Claims, 10 Drawing Sheets





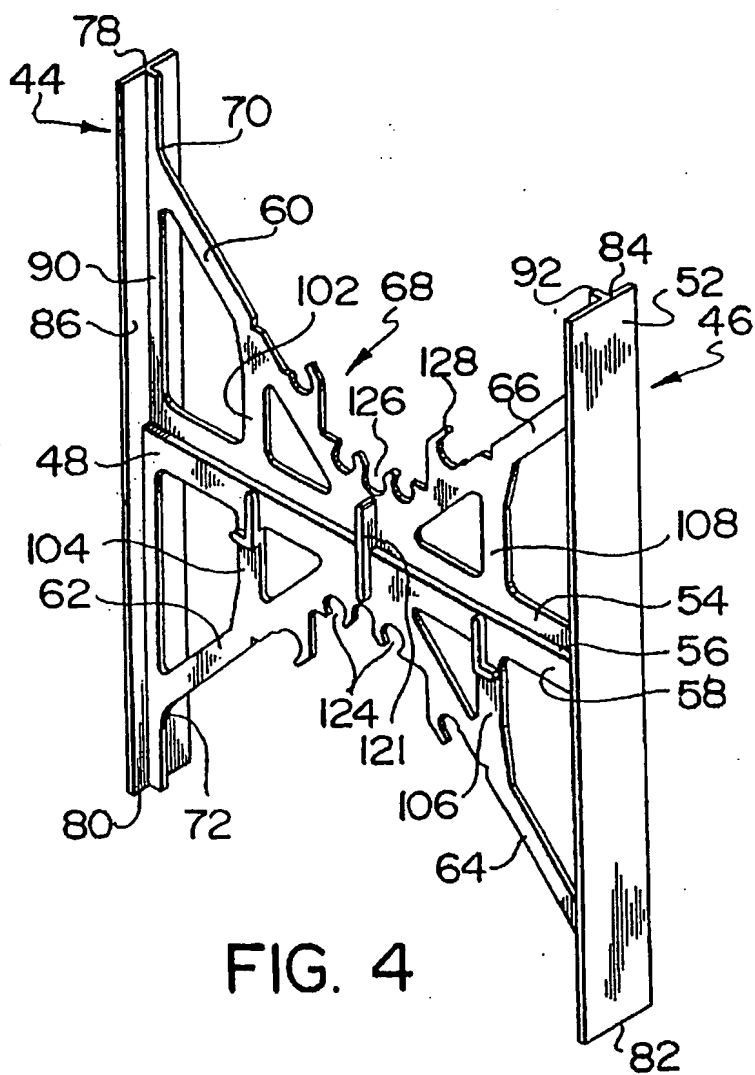


FIG. 4

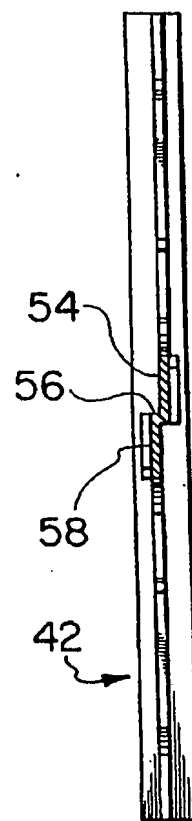


FIG. 6

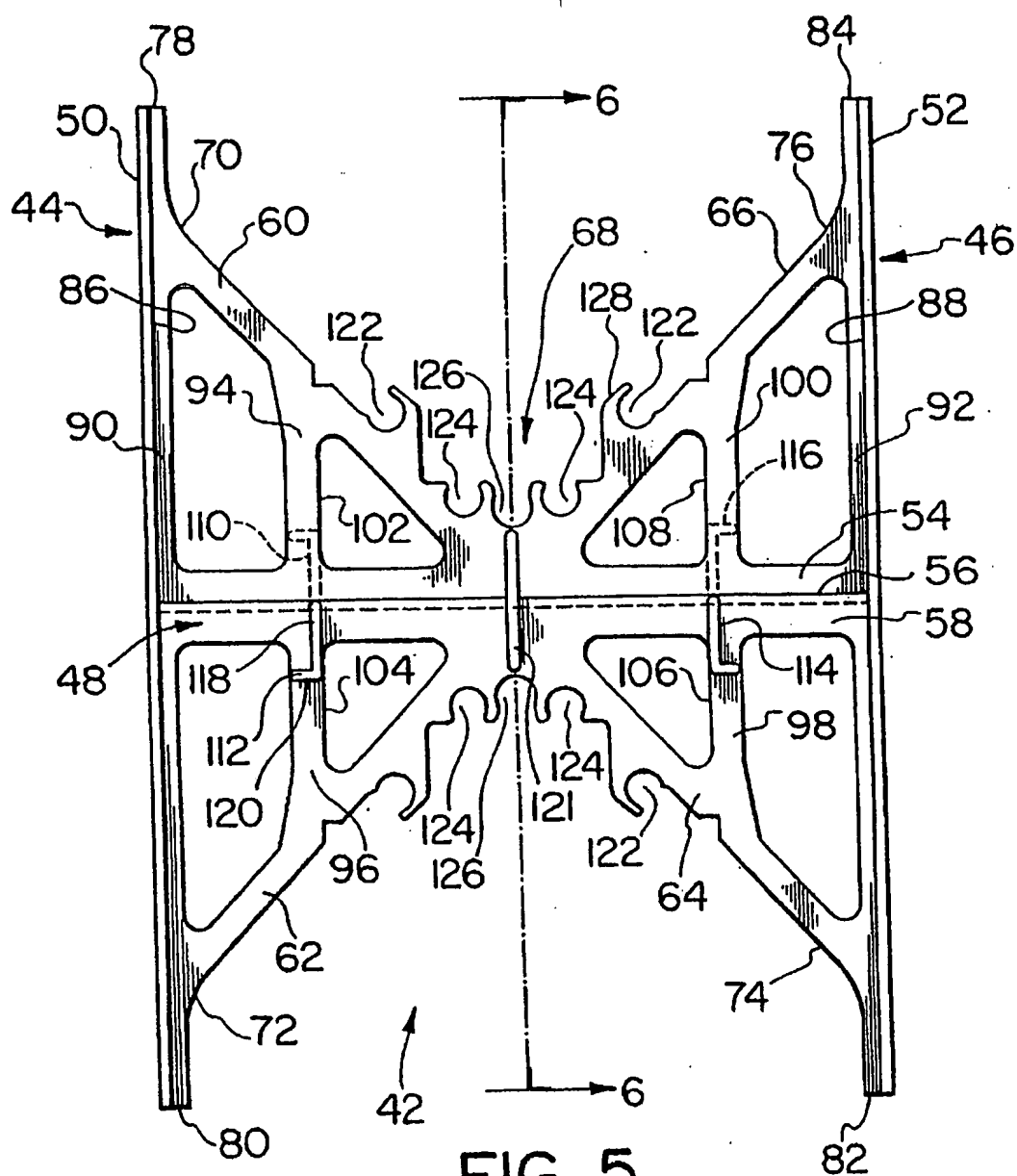


FIG. 5

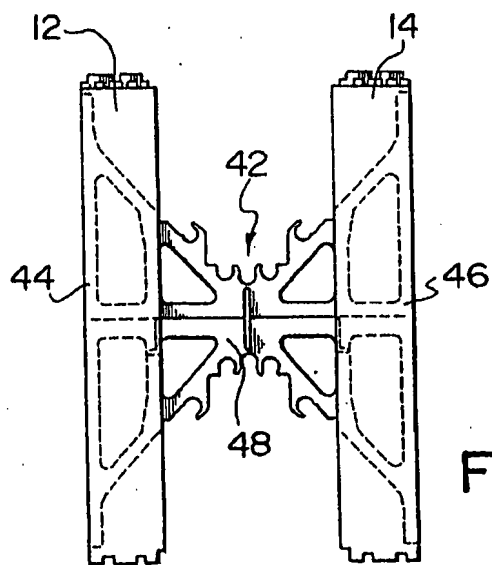


FIG. 7

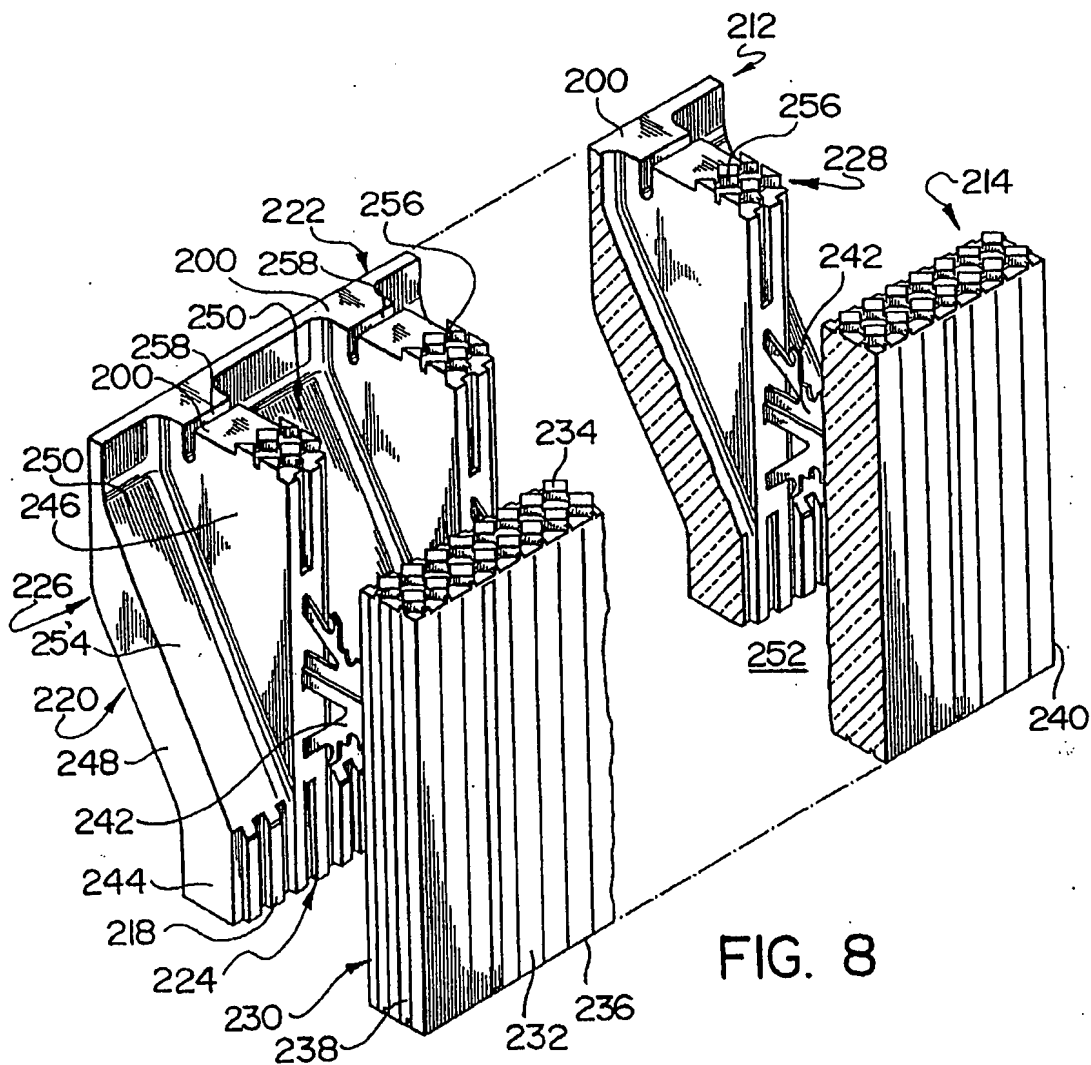
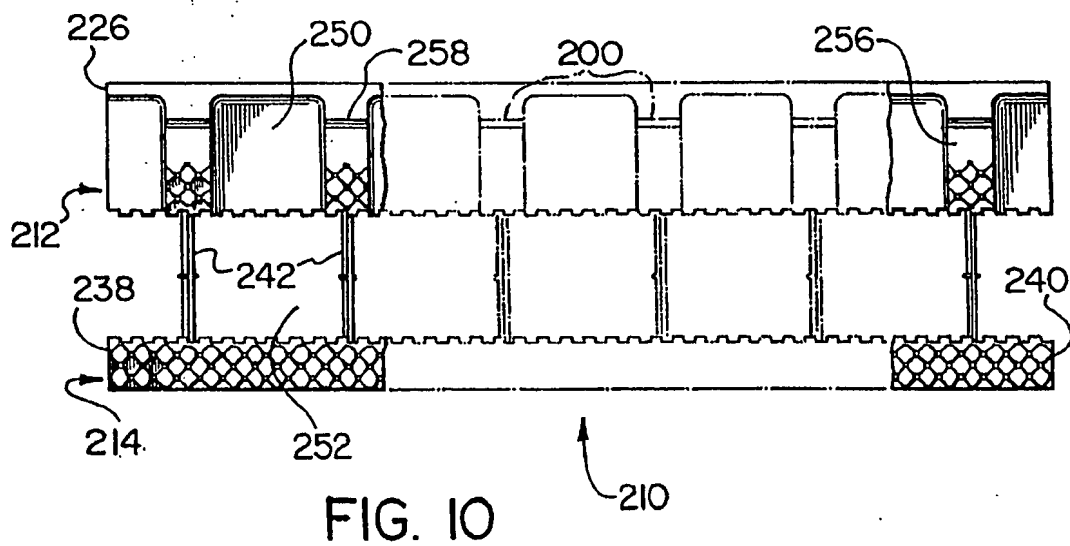
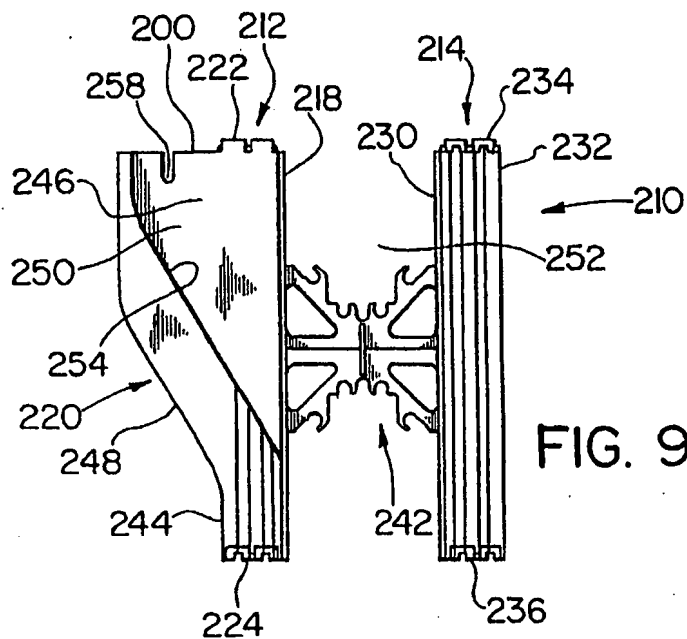


FIG. 8



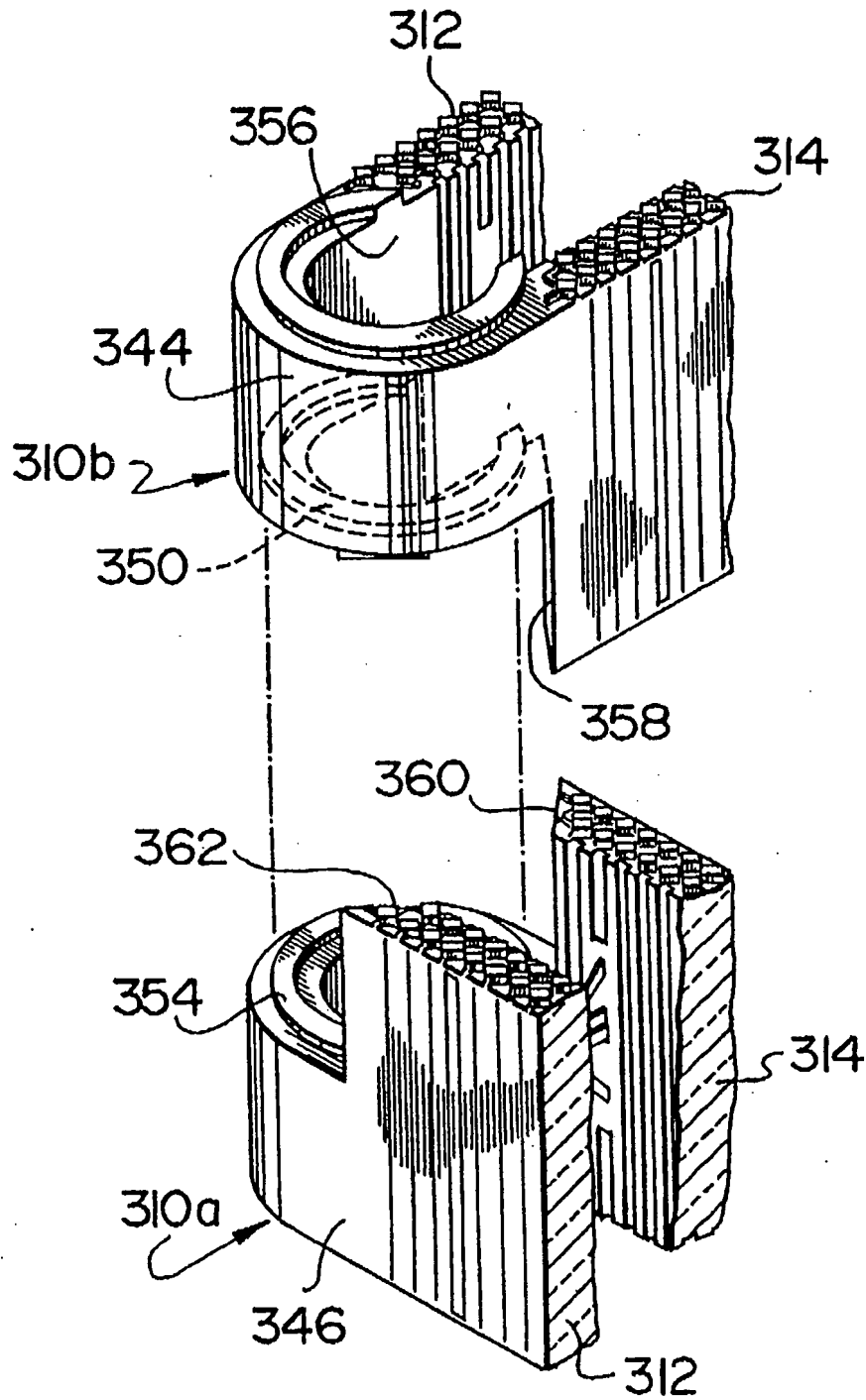
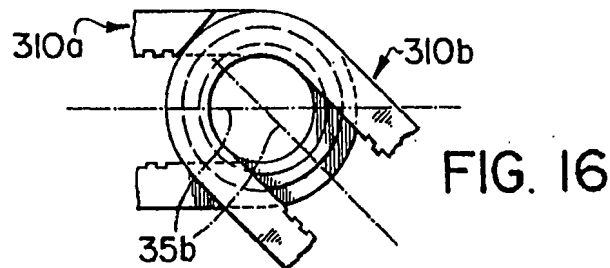
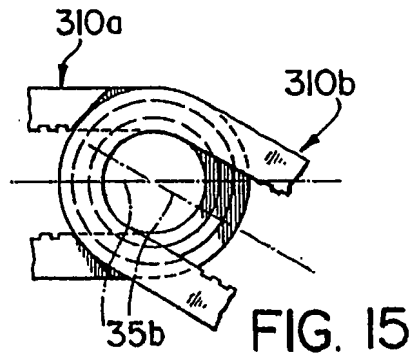
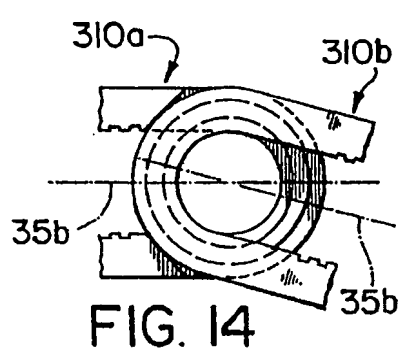
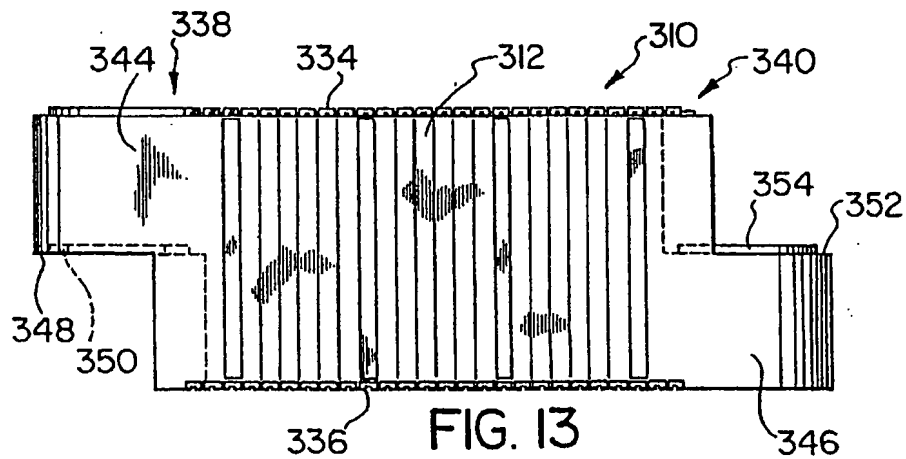
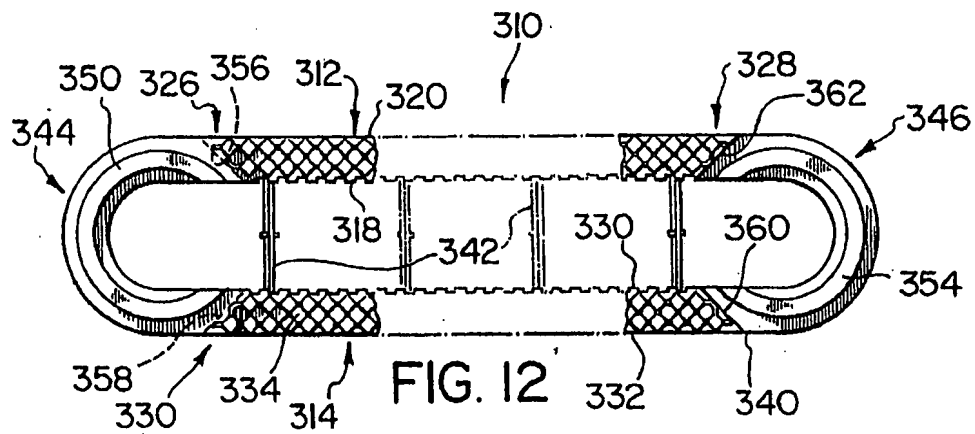


FIG. 11



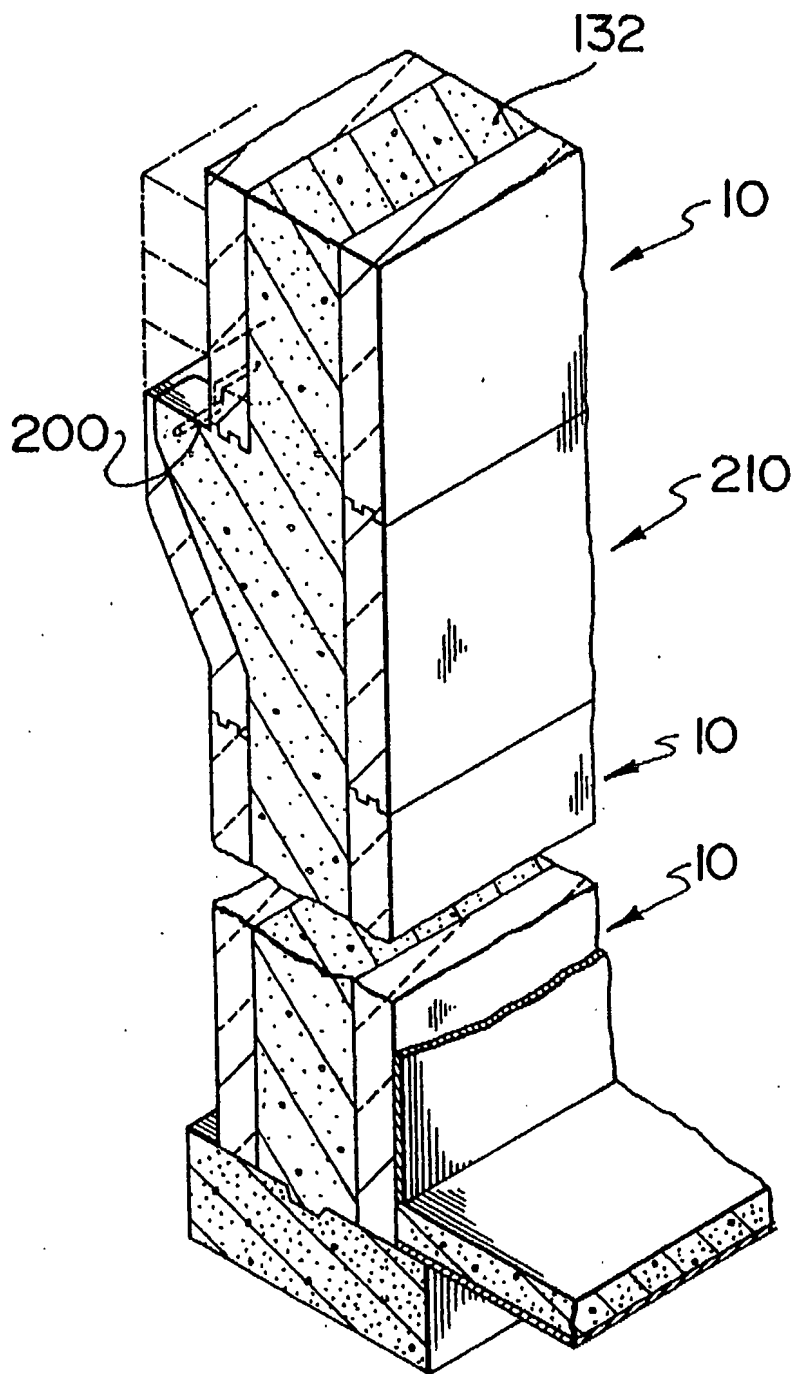


FIG. 17

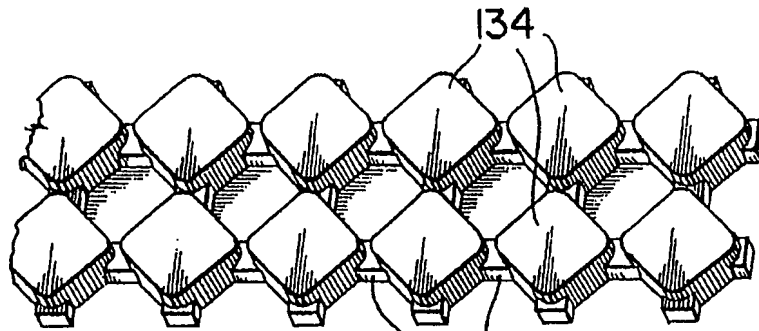


FIG. 18

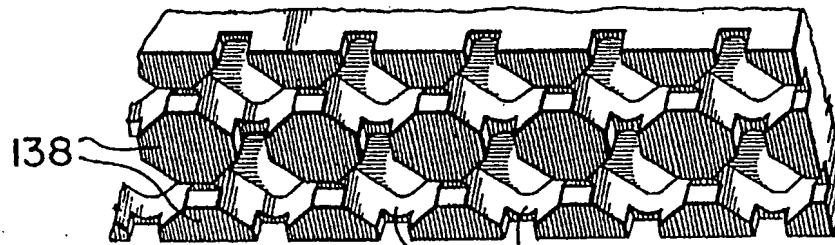


FIG. 19

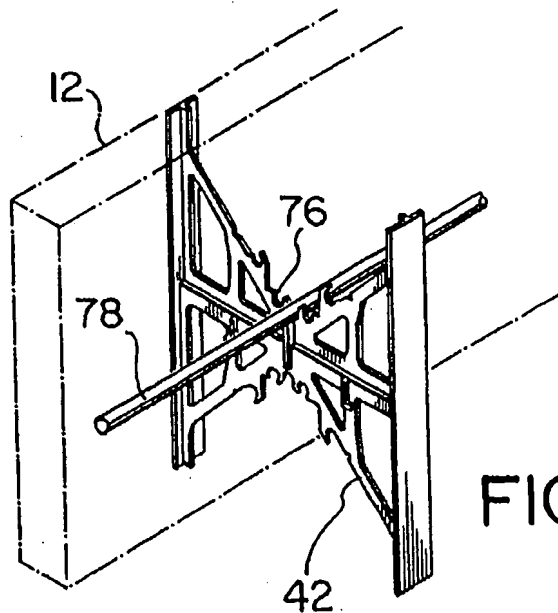


FIG. 20

WEB MEMBER FOR CONCRETE FORM WALLS

This application relates to a building component of the type which is used to build up permanent concrete form walls in building construction.

BACKGROUND OF THE INVENTION

In conventional construction in North America concrete walls are normally produced by constructing form walls, pouring concrete into the space between the form walls and, upon the setting of the concrete, removing the form walls. Finishing materials are then added to the concrete walls as required.

Typically in residential construction, concrete basement and other concrete walls will be constructed in the manner discussed above and wood framing will be constructed as required on top of or beside the walls. Insulation will be inserted between the framing members and the wall finished inside and out as desired.

Clearly both parts of this construction are inefficient. It is time-consuming and wasteful of materials to have to remove the form walls after the concrete walls are poured. Furthermore, it is now common to insulate all walls, including basement walls, particularly in colder climates, and framing and insulation must be installed separately inside the walls.

The piecemeal construction which is inherent in the wood frame part of the structure is labour-intensive and expensive.

As a result, there have been ongoing efforts for many, many years to provide more modular types of wall construction from which efficiencies can be gained.

One such construction type is that with which the current invention is concerned.

For some 15 years a system has been in use particularly in Europe which combines a number of the operations normally associated with residential and other building construction to provide savings in materials, energy, etc. The system basically comprises the use of a foam insulating material to construct permanent form walls. The form walls are constructed and the concrete poured and the form walls then left in place. The concrete walls so formed need not be confined to basement walls but may comprise all of a building's walls. No further insulation is necessary, and finishing materials may be applied to the interior and exterior of the wall as required.

Variations on this system have been proposed to achieve various improvements. All of the systems thus far proposed, while in many cases very useful, suffer from some or other disadvantages.

Against this background the present invention provides a building component for use in such a system which when integrated into a wall construction offers advantages over prior art such systems.

PRIOR ART

Applicant is aware of Canadian Patent No. 1,209,364, issued in 1986 to Aregger AG Bauunternehmung. The components described in that patent include cross members, the ends of which are disadvantageously completely embedded in the foam blocks.

United States patents of some interest include U.S. Pat. No. 4,698,947, issued October 1987 to McKay and pertaining to a block in which the cross members are again imbedded in the foam blocks but in slots provided for the purpose.

U.S. Pat. No. 4,730,422, issued March 1988 to Young, comprises form walls which again utilize bridging members the ends of which are located in slots imbedded within foam blocks.

U.S. Pat. No. 4,879,855, issued November 1989 to Berrenberg, illustrates a form wall in which the bridging members are constructed from expanded webbed steel having galvanized steel strips at the ends thereof.

U.S. Pat. No. 4,884,382, issued December 1989 to Horobin, again discloses bridging members which fit within preformed slots in foamed block members.

Applicant's own earlier U.S. patent application, Ser. No. 08/041,412, filed 31 Mar. 1993, now U.S. Pat. No. 5,390,459 discloses an improved system utilizing plastic bridging members in a form wall.

BRIEF SUMMARY OF THE INVENTION

It has now been discovered that substantial advantages can be obtained where the building component used to build up a concrete form wall comprises bridging members which are engineered to combine an enhanced strengthening and reinforcing grid with a substantial reduction in material. The grid achieves enhanced strength not only from the arrangement of bracing members but also from enlarged openings in the grid allowing improved flow of foam and, subsequently, of concrete.

Thus the invention provides a building component comprising first and second high density foam panels each having inner and outer surfaces, top and bottom, and first and second ends, the panels arranged in spaced parallel relationship with their inner surfaces facing each other, and at least two bridging members extending between and through and molded into the panel members. Each bridging member comprises a pair of elongated end plates oriented vertically and abutting against the outer surfaces of the panels; a thin narrow strip member joining the mid-areas of the end plates; a series of first narrow bracing members extending from positions adjacent a mid-point of the narrow strip member to positions spaced a short distance from the ends of the end plates; and a series of second narrow bracing members extending from positions on the first bracing members to positions on the strip member intermediate the plates and the mid-point of the strip member.

In a further embodiment there is provided, for use in a building component comprising first and second high density foam panels each having inner and outer surfaces, top and bottom, and first and second ends, the panels arranged in spaced parallel relationship with their inner surfaces facing each other, and at least two bridging members extending between and through and molded into the panel members; an improved bridging member comprising a pair of elongated end plates oriented vertically and abutting against the outer surfaces of the panels; a thin narrow strip member joining the mid-areas of the end plates; a series of first narrow bracing members extending from positions adjacent a mid-point of the narrow strip member to positions spaced a short distance from the ends of the end plates; and a series of second narrow bracing members extending from positions on the first bracing members to positions on the strip member intermediate the plates and the mid-point of the strip member.

In a further embodiment there is provided a building component comprising first and second high density foam panels each having inner and outer surfaces, top and bottom, and first and second ends. The panels are arranged in spaced parallel relationship with their inner surfaces facing each

other, and at least two bridging members extend between and through and molded into the panel members. The top of one panel is substantially thicker than the bottom thereof, the outer surface of that panel is profiled to extend outwardly and upwardly from the bottom to the top thereof, and the inside surface of the thicker part is partially cut away in areas not containing the bridging members.

In a further embodiment there is provided a building component comprising first and second high density foam panels each having inner and outer surfaces, top and bottom, and first and second ends. The panels are arranged in spaced parallel relationship with their inner surfaces facing each other, and at least two bridging members extend between and through and molded into the panel members. At at least one end of and integral with the first and second panels, an end part protrudes longitudinally from a part of that end of the panels, the end part having mating means for mating with a complementary end part on a second component.

BRIEF DESCRIPTION OF THE DRAWINGS

In drawings which illustrate embodiments of the invention:

FIG. 1 is a perspective view of a building component according to the invention.

FIG. 2 is a top plan view of a building component according to the invention.

FIG. 3 is top plan view of another embodiment of the building component according to the invention.

FIG. 4 is a perspective view of a bridging member for use in the invention.

FIG. 5 is a side view of the bridging member of FIG. 4.

FIG. 6 is an end view of the bridging member of FIG. 4.

FIG. 7 is an end view of a building component according to the invention incorporating the bridging member of FIG. 4.

FIG. 8 is a perspective view of an embodiment of the invention illustrating a brick shelf.

FIG. 9 is an end view of the embodiment of FIG. 8.

FIG. 10 is a top plan view of the embodiment of FIG. 8.

FIG. 11 is an exploded perspective view of a further embodiment of the invention.

FIG. 12 is a top plan view of a component for use in the embodiment of FIG. 11.

FIG. 13 is a side elevation of a component for use in the embodiment of FIG. 11.

FIGS. 14 to 16 are top plan views of variations of the embodiment of FIG. 11.

FIG. 17 is a perspective view of a wall section constructed according to the invention.

FIG. 18 is a perspective view of a series of protrusions and interconnecting walls for use on the top of a building component according to the invention.

FIG. 19 illustrates a series of protrusions and depressions for use on the bottom of a building component according to the invention.

FIG. 20 is a perspective view of a building component according to the invention illustrating the use of rebar.

While the invention will be described in conjunction with illustrated embodiments, it will be understood that it is not intended to limit the invention to such embodiments. On the contrary, it is intended to cover all alternatives, modifications and equivalents as may be included within the spirit and scope of the invention as defined by the appended claims.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

The building component 10 comprises first and second foam panels 12 and 14 secured together by at least two bridging members 42.

Panel 12 comprises inner and outer surfaces 18 and 20 respectively, top and bottom 22 and 24 respectively, and first and second ends 26 and 28. Panel 14 comprises inner and outer surfaces 30 and 32, top and bottom 34 and 36, and first and second ends 38 and 40.

The panels 12 and 14 are preferably fire retardant expanded polystyrene, polyethylene or polypropylene. Subject to indentations and protrusions of minor height to be discussed below, the panels are of uniform rectangular cross-section. In a typical case each panel may be 48 inches long, 16 $\frac{1}{4}$ inches high and 2 $\frac{1}{2}$ inches thick.

Bridging members 42 comprise a pair of elongated end plates 44 and 46 joined by narrow strip member 48.

As illustrated, for example, in FIG. 1, the end plates 44 and 46 have their outer surfaces 50 and 52 respectively substantially flush with the outer surfaces 20 and 32 of panels 12 and 14 respectively. End plates 44 and 46 are oriented vertically relative to panels 12 and 14. Throughout this specification references to vertical and horizontal are intended to indicate the orientation of component 10 in position of use in a vertical wall.

In the preferred configuration of bridging members 42, as illustrated in FIGS. 4 to 6, the narrow strip member 48 has a stepped configuration such that a first part 54 is horizontally offset at 56 from a second part 58.

Narrow bracing members 60, 62, 64 and 66 extend between a mid-area 68 of narrow strip member 48 and positions 70, 72, 74 and 76 close to but spaced from the extremities 78, 80, 82 and 84 of end plates 44 and 46. In the preferred embodiment end plates 44 and 46 include on the inner surfaces 86 and 88 thereof elongated reinforcing ribs 90 and 92 which are integral with the respective ends of bracing members 60, 62, 64 and 66.

Bridging member 42 includes second bracing members 94, 96, 98 and 100 between narrow strip member 48 and first bracing members 60, 62, 64 and 66 respectively. In the preferred configuration second bracing members 94, 96, 98 and 100 are substantially vertically oriented and have their inner edges 102, 104, 106 and 108 respectively substantially flush with inner surfaces 18 and 30 respectively of panels 12 and 14.

The first bracing members 60, 62, 64 and 66 form in their preferred configuration an X-shape joining the positions 70, 72, 74 and 76 near the ends of end plates 44 and 46 through the mid-area 68. This configuration provides a substantial increase in strength in the bridging member over known such members.

In the preferred configuration transverse stiffening members 110, 112, 114 and 116 are provided between narrow strip member 48 and second bracing members 94, 96, 98 and 100 respectively. In configuration each of these members includes a first part 118 which in use is substantially flush with the inner surfaces 18 and 30 of panels 12 and 14; and a second section 120 which extends into said panels.

There is also preferably provided a transverse stiffening member 121 across both surfaces of mid-area 68.

Mid-area 68 is preferably enlarged and profiled to provide a series of seats for rebar positioning. Thus, utilizing the seats 122 provides an open pattern of rebar. Use of seats 124 provides a more closed pattern. Seats 126 provide one or two centred rebar rods.

In order to position and stabilize vertical rebar in constructing the wall, horizontal rebar may be placed in alternate seats, as selected, with the vertical rebar then placed between horizontal rebar. For example, horizontal rebar may be placed in seats 124 with vertical rebar in the space between.

Clearly a preferred pattern of rebar installation may be selected to meet job requirements.

In the preferred configuration each of the rebar seats is provided with a resilient hook member as at 128 to provide a snap fit to maintain the rebar in position. This will avoid the extra labour involved in tying in some or all of the rebar.

Each bridging member 42 comprises a single integral unit molded of plastic. The preferred plastic is high-density flame retardant polyethylene, although flame retardant polypropylene, polystyrene and other suitable polymers may be used.

The bridging members 42 are molded into the panels 12 and 14 in the course of producing the panels. As best seen in FIG. 1, the end plates 44 and 46 are preferably of substantially equal height with the panels 12 and 14 and are substantially flush with the top and bottom of the panels, subject to the vertical joining means on the panels, to be discussed below.

As illustrated in FIG. 17, a series of components 10, including a row of components 210 (FIGS. 8-10) are built up to form a wall 130. Initially a series of components 10 and 210 are stacked to form a hollow wall or concrete form after which concrete 132 is poured into the hollow part of wall 130 to complete the wall.

In order to facilitate the stacking of the components 10, the panels 12 and 14 are provided on the top thereof with a series of plugs 134 joined by low walls 136 (FIG. 18); and on the bottom 24 and 36 thereof with a mating series of plugs 138 and walls 140 (FIG. 19). The plugs 134 and 138 are offset relative to each other, such that when the bottom of one component 10 is placed on the top of a lower component 10, the plugs 134 and walls 136 of the upper component mate with the plugs 138 and walls 140 of the bottom component to form a tight seal to prevent leakage of concrete during wall formation and of energy through the completed wall.

As best illustrated in FIGS. 2 and 3, the inner surfaces 18 and 30 of panels 12 and 14 respectively are preferably provided with a series of indentations 142. Concrete being poured into the hollow wall will flow into indentations 142 and enhance the bond between panels 12 and 14 and concrete 132.

With reference to FIGS. 8 to 10, an embodiment of the invention is shown which provides for an integral brick shelf 200 to be formed at the appropriate level of the form wall. This will normally be at grade. In current construction considerable cost and labour is expended in providing footings for brick cladding where a brick structure is being constructed. The embodiment of FIGS. 8 to 10 permits an integral brick shelf to be constructed.

Thus, the building component 210 comprises first and second foam panels 212 and 214 secured together by at least two bridging members 242.

Panel 212 comprises inner and outer surfaces 218 and 220 respectively, top and bottom 222 and 224 respectively, and first and second ends 226 and 228. Panel 214 comprises inner and outer surfaces 230 and 232, top and bottom 234 and 236, and first and second ends 238 and 240.

As can be seen in FIGS. 8 to 10, the top 222 of panel 212 is substantially thicker than the bottom 224. The outer

surface 220 of panel 212 is profiled to extend outwardly and upwardly from bottom 224 to the top 222. In the preferred configuration bottom part 244 of panel 212 is the same thickness as panel 214 and of other panels in a wall. At part 244 the outer surface 220 is preferably vertical. A top part 246 of panel 212 is substantially thicker than bottom part 244. Outer surface 220 at part 246 is also preferably vertical. At an intermediate part 248 of panel 212 the outer surface 220 is profiled to join lower part 244 to thicker upper part 246.

As illustrated in FIGS. 8 and 9, parts of thicker upper part 246 of panel 212 are cut away (by means of mold cavities rather than by actual cutting) in areas which do not contain bridging members 242. The cut-away areas 250 are thus open to the space 252 between the panels.

The inner surface 218 of panel 212 in the area of cut-aways 250 is profiled as at 254 to follow the profile of outer surface 220, although not necessarily at uniform distance from that outer surface.

It will thus be seen that when a wall is constructed in the usual way which includes a course of modified components 210 (see FIG. 17), and when concrete is poured to form the core of the wall, the concrete will fill the cut-aways or cavities 250 to form the brick shelf integral with the wall.

The solid foam partitions 256 between cut-aways 250 preferably include a slot 258 to support rebar or other reinforcing means for the shelf.

A further problem which arises in the construction of form walls concerns the difficulty in establishing correct angles where a directional change in a wall of less than 90° is required. If, for example, the angle in a foundation wall is incorrect by a small amount, the entire building above that part of the foundation is affected. Accordingly, the embodiment of FIGS. 11 to 16 has been devised to enable a range of directional changes or corners to be accurately constructed in a form wall, providing continuity in the form wall.

Thus, the component 310 comprises panels 312 and 314 secured together by a series of bridging members 342. Panel 312 comprises inner and outer surfaces 318 and 320 respectively, and first and second ends 326 and 328. Panel 314 comprises inner and outer surfaces 330 and 332, top and bottom 334 and 336, and first and second ends 338 and 340.

At the end of component 310 integral end parts 344 and 346 are shown. These end parts are seen to be integral with panels 312 and 314 respectively. Each of end parts 344 and 346 is preferably semi-circular in configuration.

As illustrated in FIG. 13, end part 344 extends from the upper half of ends 326 and 328 of panels 312 and 314; and end part 346 extends from the lower half of ends 328 and 340 of the panels. End part 344 preferably includes in a lower surface 348 thereof a central semi-circular groove 350.

The upper surface 352 of end part 346 includes a complementary central raised tongue 354 of semi-circular plan.

When a change of direction of, say, 30° is required in a wall, the component 310 can be bisected at an appropriate point and turned end to end to form part components 310a and 310b (FIG. 11). The tongue 354 can then be mated with the groove 350 and the units rotated to the required angle. At that point a part of the end parts 344 and 346 will cross the space 356 between the panels. That part of the end parts 344 and 346 can then simply be cut out to allow the concrete core to be installed.

The ends 326 and 328 of panel 310, and 338 and 340 of panel 314 are angled as shown at 356, 358, 360 and 362 to

accommodate the semi-circular end parts 344 and 346 over a range of rotation.

While a preferred configuration of this embodiment has been described, a number of variations are possible. For example, rather than being of semi-circular configuration, the end parts may be stepped to accommodate specific predetermined angles as in a semi-hexagonal configuration.

As well, only one of end parts 344 and 346 may be present on a given component with a second complementary and mating end part on a second component. There are, however, advantages in including the two end parts on a single component. These include the very significant fact that only a single mold is required for that case. As well, where the double-ended panels are utilized, builders will always be sure of having available an equal number of half joints.

The highly preferred overlapping configuration of blocks in a wall can be achieved with the double-ended unit by bisecting succeeding double-ended blocks at different locations along their length into non-equal parts.

In the typical basic component discussed earlier (e.g. FIG. 1), of 48-inch width, the bridging members 42 will preferably be spaced on 8-inch centres with the two bridging members closest to the ends of the component located 4 inches from the ends. Thus, when the panels are overlapped to form the wall, the bridging members of the various courses can be aligned to form continuous strips of end plates 44 and 46 over the entire height of the wall. This is a very significant advantage of the present system, since interior or exterior wall cladding can be fixed to the exterior of the end plates 44 and 46, preferably using screws.

Drainage is provided and parging and damp-proofing of the exterior as is the case with a conventional concrete basement wall.

Using the typical dimensions noted above with a panel separation of $\frac{6}{4}$ inches ($\frac{6}{4}$ inches of concrete) the insulating value of the wall is R26. This is a very high rating for wall construction and thus no additional insulation is required. In addition to the energy-saving value of the insulation, the walls have high resistance to sound transmission with a typical sound reduction of 53 DBA.

The typical component noted above will weigh only about 2.8 kgs. and so provides a substantial advantage to tradesmen building a wall.

Thus it is apparent that there has been provided in accordance with the invention a building component that fully satisfies the objects, aims and advantages set forth above. While the invention has been described in conjunction with specific embodiments thereof, it is evident that many alternatives, modifications and variations will be apparent to those skilled in the art in light of the foregoing description. Accordingly, it is intended to embrace all such alternatives, modifications and variations as fall within the spirit and broad scope of the invention.

What I claim as my invention is:

1. A building component comprising:

first and second high density foam panels each having inner and outer surfaces, top and bottom, and first and second ends, said panels arranged in spaced parallel relationship with their inner surfaces facing each other, and

at least two bridging members extending between and through and molded into said panel members,

each said bridging member comprising:

a pair of elongated end plates oriented vertically and abutting against said outer surfaces of said panels;

a thin narrow strip member joining the mid-areas of said end plates;

a series of first narrow bracing members extending from positions adjacent a mid-point of said narrow strip member to positions spaced a short distance from the ends of said end plates; and

a series of second narrow bracing members extending from positions on said first bracing members to positions on said strip member intermediate said plates and said mid-point of said strip member.

2. The component of claim 1 wherein said second bracing members are oriented substantially vertically.

3. The component of claim 2 wherein an edge of each said second bracing member closest to said mid-point of said narrow strip is substantially flush with said inner surface of a respective said panel.

4. The component of claim 3 including a series of short outer transverse stiffening members extending from said narrow strip vertically along said edges of said second bracing members and substantially flush with said inner surfaces of respective said panels.

5. The component of claim 4 wherein said stiffening members include a short 90 degree extension across respective said second bracing members into respective said panels.

6. The component of claim 1 including a central transverse stiffening member on each side of said mid-point of said narrow strip.

7. The component of claim 1 wherein said narrow strip includes a widened area about its mid-point with which said first bracing members are integral and which includes a predetermined pattern of seats whereby rebar may be selectively positioned relative to said component.

8. The component of claim 7 wherein said seats are defined in part by yieldable members whereby to provide snap fit for said rebar.

9. The component of claim 1 wherein lines through said series of first bracing members form an "X" pattern between said end plates.

10. The component of claim 1 including an elongated stiffening rib along an inner face of said end plates, said rib integral with ends of said first bracing members.

11. The component of claim 1 wherein said narrow strip has a stepped configuration in which an upper part of said strip is horizontally offset from a lower part thereof.

12. For use in a building component comprising first and second high density foam panels each having inner and outer surfaces, top and bottom, and first and second ends, said panels arranged in spaced parallel relationship with their inner surfaces facing each other, and at least two bridging members extending between and through and molded into said panel members; an improved bridging member comprising:

a pair of elongated end plates oriented vertically and abutting against said outer surfaces of said panels;

a thin narrow strip member joining the mid-areas of said end plates;

a series of first narrow bracing members extending from positions adjacent a mid-point of said narrow strip member to positions spaced a short distance from the ends of said end plates; and

a series of second narrow bracing members extending from positions on said first bracing members to positions on said strip member intermediate said plates and said mid-point of said strip member.

13. A building component comprising:

first and second high density foam panels each having inner and outer surfaces, top and bottom, and first and

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second ends, said panels arranged in spaced parallel relationship with their inner surfaces facing each other, and

at least two bridging members extending between and through and molded into said panel members,

and wherein said top of one said panel is substantially thicker than the bottom thereof, said outer surface of said one panel is profiled to extend outwardly and upwardly from said bottom thereof to said top thereof, and wherein said inside surface of said thicker part is partially cut away in areas spaced from said bridging members.

14. The component of claim 13 wherein said outer surface of said one panel includes a lower vertical part, an upper vertical part, and an intermediate part connecting said lower and upper parts.

15. The component of claim 14 wherein said cut away parts follow the profile of but are spaced from said outer surface of said one panel.

16. A building component comprising:

first and second high density foam panels each having inner and outer surfaces, top and bottom, and first and second ends, said panels arranged in spaced parallel relationship with their inner surfaces facing each other, and

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at least two bridging members extending between and through and molded into said panel members,

each said bridging member comprising:

a pair of elongated end plates oriented vertically and abutting against said outer surfaces of said panels;

a thin narrow strip member joining the mid-areas of said end plates;

a series of first narrow bracing members extending from positions adjacent a mid-point of said narrow strip member to positions spaced a short distance from the ends of said end plates;

a series of second narrow bracing members extending from positions on said first bracing members to positions on said strip member intermediate said plates and said mid-point of said strip member;

and wherein said top of one said panel is substantially thicker than the bottom thereof, said outer surface of said one panel is profiled to extend outwardly and upwardly from said bottom thereof to said top thereof, and wherein said inside surface of said thicker part is partially cut away in areas not containing said bridging members.

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UNITED STATES DEPARTMENT OF COMMERCE
Patent and Trademark Office
ASSISTANT SECRETARY AND COMMISSIONER
OF PATENTS AND TRADEMARKS
Washington, D.C. 20231

MEMORANDUM

Date: September 21, 1999

To: Patent Examining Corps

From: Stephen G. Kunin

Deputy Assistant Commissioner for Patent Policy and Projects

Subject: Applying the Recapture Rule to Reissue Applications

The following material provides guidance to the patent examining corps in applying the recapture rule to reissue applications. The substance of the material will be incorporated into Chapter 1400 of the MPEP in the next revision.

RECAPTURE OF SURRENDERED SUBJECT MATTER

A reissue will not be granted to "recapture" claimed subject matter which was surrendered in an application to obtain the original patent- *Hester Industries, Inc. v. Stein, Inc.*, 142 F.3d 1472, 46 USPQ2d 1641 (Fed. Cir. 1998); *In re Clement*, 131 F.3d 1464, 45 USPQ2d 1161 (Fed. Cir. 1997); *Ball Corp. v. United States*, 729 F.2d 1429, 1436, 221 USPQ 289, 295 (Fed. Cir. 1984); *In re Wadlinger*, 496 F.2d 1200, 181 USPQ 826 (CCPA 1974); *In re Richman*, 409 F.2d 269, 276, 161 USPQ 359, 363-364 (CCPA 1969); *In re Willingham*, 282 F.2d 353, 127 USPQ 211 (CCPA 1960).

TWO STEP TEST FOR RECAPTURE:

In *Clement*, 131 F.3d at 1468-69, 45 USPQ2d at 1164, the Court of Appeals for the Federal Circuit set forth guidance for recapture as follows:

The first step in applying the recapture rule is to determine whether and in what aspect the reissue claims are broader than the patent claims. For example, a reissue claim that deletes a limitation or element from the patent claims is broader in that limitation's aspect.... Under *Mentor [Mentor Corp. v. Coloplast, Inc.]*, 998 F.2d 992, 994, 27 USPQ2d 1521, 1524 (Fed. Cir. 1993)], courts must determine in which aspects the reissue claim is broader, which includes broadening as a result of an omitted limitation....

The second step is to determine whether the broader aspects of the reissue claims relate to surrendered subject matter. To determine whether an

applicant surrendered particular subject matter, we look to the prosecution history for arguments and changes to the claims made in an effort to overcome a prior art rejection. See *Mentor*, 998 F.2d at 995-96, 27 USPQ2d at 1524-25; *Ball Corp. v. United States*, 729 F.2d 1429, 1436, 221 USPQ 289, 294-95 (Fed. Cir. 1984).

In every reissue application, the examiner must first review each claim for the presence of broadening, as compared with the scope of the claims of the patent to be reissued. A reissue claim is broadened where some limitation of the patent claims is no longer required in the reissue claim; see MPEP § 1412.03 for guidance as to the nature of a "broadening claim."

Where a claim in a reissue application is in fact broadened, the examiner must next determine whether the broader aspects of that reissue claim relate to subject matter that applicant previously surrendered during the prosecution of the original application (which became the patent to be reissued). Each limitation of the patent claims, which is omitted or broadened in the reissue claim, must be reviewed for this determination.

It is noted that the facts in *Hester* and *Clement* (and the other cases cited above) were directed to subject matter surrendered in response to art rejections. The question as to whether other rejections may also give rise to recapture, however, remains unsettled in the case law.

CRITERIA FOR DETERMINING THAT SUBJECT MATTER HAS BEEN SURRENDERED:

If the limitation now being omitted or broadened in the present reissue was originally presented/argued/stated in the original application to make the claims allowable over a rejection or objection made in the original application, the omitted limitation relates to subject matter previously surrendered by applicant, and impermissible recapture exists.

The examiner should review the prosecution history of the original application file (of the patent to be reissued) for recapture. The prosecution history includes the rejections and applicant's arguments made therein. The record of the original application must show that the broadening aspect (the omitted/broadened limitation(s)) relates to subject matter that applicant previously surrendered. For example:

1) A limitation of the patent claims is omitted in the reissue claims. This omission provides a broadening aspect in the reissue claims, as compared to the claims of the patent. The omitted limitation was originally argued in the original application to make the application claims allowable over a rejection or objection made in the application. Thus, the omitted limitation relates to subject matter previously surrendered, in the original application.

Note: The argument that the claim limitation defined over the rejection must have been specific as to the limitation; rather than a general statement regarding the claims

as a whole. In other words, a general "boiler plate" sentence will not be sufficient to establish recapture. An example of one such "boiler plate" sentence is:

"In closing, it is argued that the limitations of claims 1-7 distinguish the claims from the teachings of the prior art, and claims 1-7 are thus patentable."

This general "argument" will not, by itself, be sufficient to establish surrender and recapture.

2) The limitation omitted in the reissue was added in the original application claims for the purpose of making the claims allowable over a rejection or objection made in the application. Even though applicant made no argument on the record that the limitation was added to obviate the rejection, the nature of the addition to the claim can show that the limitation was added in direct reply to the rejection. This too will establish the omitted limitation as relating to subject matter previously surrendered. To illustrate this, note the following example:

The original application claims recite limitations A+B+C, and the Office action rejection combines two references to show A+B+C. In the amendment replying to the Office action, applicant adds limitation D to A+B+C in the claims, but makes no argument as to that addition. The examiner then allows the claims. Even though there is no argument as to the addition of limitation D, it must be presumed that the D limitation was added to obviate the rejection. The subsequent deletion of (omission of) limitation D in the reissue claims would be presumed to be a broadening in an aspect of the reissue claims related to surrendered subject matter.

3) The limitation A omitted in the reissue claims was present in the claims of the original application. The examiner's reasons for allowance in the original application stated that it was that limitation A which distinguished over a potential combination of references X and Y. Applicant did not present on the record a counter statement or comment as to the examiner's reasons for allowance, and permitted the claims to issue. The omitted limitation is thus established as relating to subject matter previously surrendered.

ARGUMENT (WITHOUT AMENDMENT TO THE CLAIMS) IN THE ORIGINAL APPLICATION MAY BE SUFFICIENT TO ESTABLISH RECAPTURE:

In *Clement*, the recapture was directed to subject matter surrendered in the original application by changes made to the claims (i.e., amendment of the claims) in an effort to overcome a prior art rejection. The *Clement* Court, however, also stated that "[t]o determine whether an applicant surrendered particular subject matter, we look to the prosecution history for arguments and changes to the claims made in an effort to overcome a prior art rejection." [Emphasis added] 131 F.3d at 1469, 45 USPQ2d at 1164. This statement in *Clement* was subsequently discussed in *Hester Industries, Inc. v. Stein, Inc.*, *supra*, where the Court observed that surrender of claimed subject matter may occur by arguments made during the prosecution of the original patent application even where there was no claim change made. The Court in *Hester* held that the surrender which forms the basis for impermissible recapture "can occur

through arguments alone." 142 F.3d at 1482, 46 USPQ2d at 1649. Accordingly, where claims are broadened in a reissue application, the examiner should review the prosecution history of the original patent file for recapture, even where the claims were never amended during the prosecution of the application which resulted in the patent.

REISSUE CLAIMS ARE SAME OR BROADER IN SCOPE IN ALL ASPECTS:

The recapture rule bars the patentee from acquiring through reissue claims that are, in all aspects, of the same scope as, or are broader in scope than, those claims canceled from the original application to obtain a patent. *Ball*, 729 F.2d at 1436, 221 USPQ at 295.

REISSUE CLAIMS ARE NARROWER IN SCOPE IN ALL ASPECTS:

The patentee is free to acquire, through reissue, claims that are narrower in scope in all aspects than claims canceled from the original application to obtain a patent. If the reissue claims are narrower than the claims canceled from the original application, yet broader than the original patent claims, reissue must be sought within 2 years after the grant of the original patent. *Ball*, 729 F.2d at 1436, 221 USPQ at 295. See MPEP § 1412.03 as to broadening claims.

REISSUE CLAIMS ARE BROADER IN SOME ASPECTS, BUT NARROWER IN OTHERS:

Reissue claims that are broader in certain aspects and narrower in others *vis-à-vis* claims canceled from the original application to obtain a patent may avoid the effect of the recapture rule if the claims are broader in a way that does not attempt to reclaim what was surrendered earlier. *Mentor Corp. v. Coloplast, Inc.*, 998 F.2d 992, 994, 27 USPQ2d 1521, 1525 (Fed. Cir. 1993). "[I]f the reissue claim is as broad as or broader in an aspect germane to a prior art rejection, but narrower in another aspect completely unrelated to the rejection, the recapture rule bars the claim; [] if the reissue claim is narrower in an aspect germane to [a] prior art rejection, and broader in an aspect unrelated to the rejection, the recapture rule does not bar the claim, but other rejections are possible." *Clement*, 131 F.3d at 1470, 45 USPQ2d at 1165.

If the broadening aspect of the reissue claim relates to subject matter previously surrendered, the examiner must determine whether the newly added narrowing limitation in the reissue claim modifies the claim such that the scope of the claim no longer results in a recapture of the surrendered subject matter. If the narrowing limitation modifies the claim in such a manner that the scope of the claim no longer results in a recapture of the surrendered subject matter, then there is no recapture. In this situation, even though a rejection based on recapture is not made, the examiner should make of record the reason(s) why, as a result of the narrowing limitation, there is no recapture.

REISSUE TO TAKE ADVANTAGE OF 35 U.S.C. 103(b):

A patentee may file a reissue application to permit consideration of process claims which qualify for 35 U.S.C. 103(b) treatment if a patent is granted on an application entitled to the benefit of 35 U.S.C. 103(b), without an election having been made as a result of error without deceptive intent. See MPEP § 706.02(n). **This is not to be considered a recapture.** The addition of process claims, however, will generally be considered to be a *broadening* of the invention (*Ex Parte Wikdahl*, 10 USPQ2d 1546 (Bd. Pat. App. & Inter. 1989)), and such addition must be applied for within two years of the grant of the original patent. See also MPEP § 1412.03 as to broadened claims.

REISSUE FOR ARTICLE CLAIMS WHICH ARE FUNCTIONAL DESCRIPTIVE MATERIAL STORED ON A COMPUTER-READABLE MEDIUM:

A patentee may file a reissue application to permit consideration of article of manufacture claims which are functional descriptive material stored on a computer-readable medium, where these article claims correspond to the process or machine claims which have been patented. The error in not presenting claims to this statutory category of invention (the "article" claims) must have been made as a result of error without deceptive intent. The addition of these "article" claims will generally be considered to be a *broadening* of the invention (*Ex Parte Wikdahl*, 10 USPQ2d 1546 (Bd. Pat. App. & Inter. 1989)), and such addition must be applied for within two years of the grant of the original patent. See also MPEP § 1412.03 as to broadened claims.

REJECTION BASED UPON RECAPTURE:

Reissue claims which recapture surrendered subject matter should be rejected using form paragraph 14.17 as follows. < Note: the MPEP has not yet been revised to include this version of 14.17 >

¶ 14.17 Rejection, 35 U.S.C. 251, Recapture

Claim [1] rejected under 35 U.S.C. 251 as being an improper recapture of broadened claimed subject matter surrendered in the application for the patent upon which the present reissue is based. See *Hester Industries, Inc. v. Stein, Inc.*, 142 F.3d 1472, 46 USPQ2d 1641 (Fed. Cir. 1998); *In re Clement*, 131 F.3d 1464, 45 USPQ2d 1161 (Fed. Cir. 1997); *Ball Corp. v. United States*, 729 F.2d 1429, 1436, 221 USPQ 289, 295 (Fed. Cir. 1984). A broadening aspect is present in the reissue which was not present in the application for patent. The record of the application for the patent shows that the broadening aspect (in the reissue) relates to subject matter that applicant previously surrendered during the prosecution of the application. Accordingly, the narrow scope of the claims in the patent was not an error within the meaning of 35 U.S.C. 251, and the broader scope surrendered in the application for the patent cannot be recaptured by the filing of the present reissue application.

[2]

Examiner Note: In bracket 2, the examiner should explain the specifics of why recapture exists, including an identification of the omitted/broadened claim limitations in the reissue which provide the "broadening aspect" to the claim(s), and where in the

original application the narrowed claim scope was presented/argued to obviate a rejection/objection. See MPEP 1412.02.

EXAMPLES:

The following examples illustrate recurring fact situations presenting recapture issues and their resolution. It should be noted that each recapture issue should be decided on a case-by-case basis.

Bread compositions and bread making are used in the examples for ease of comparison, and so that the reader need not adjust to a very different fact pattern for different examples.

Example 1- Recapture based on claim limitations added in original application to overcome prior art:

Original prosecution:

An application was filed containing only one claim reciting:

Claim 1: A bread containing chocolate, pepper, and tomatoes, which provide a unique taste to the bread.

During the original prosecution, the examiner issued an Office action rejecting claim 1 based upon references X and Y which together teach a bread having chocolate, pepper, and tomatoes.

In an amendment replying to the Office action, applicant added (from the specification) "orange peels" to claim 1 and argued that the amendment overcame the rejection based on references X and Y. The claim, as amended, recited:

Claim 1 (once amended): A bread containing chocolate, pepper, tomatoes and orange peels, which provide a unique taste to the bread.

The examiner allowed the claim and passed the application to issue. A patent then issued on the application.

Reissue proceedings:

In a reissue application, new claim 2 is presented for a bread containing chocolate, pepper, and tomatoes, which provide a unique taste to the bread. Because of market place developments which now show the need to claim a bread without "orange peels," new claim 2 does not include the limitation of "orange peels" that defined over references X and Y in the original application.

The reissue oath points out that the original presentation (in the patent) of only a claim which included "orange peels" was "error" upon which reissue may be based; thus, claim 2 which omits "orange peels" is added in the reissue. The oath points out that the error arose because applicant's attorney incorrectly assumed that the

manufacture of the bread without orange peels was not commercially feasible due to the consistency of the resulting bread.

A "commercial success" affidavit is newly presented in the reissue application to show that claim 2 is patentable over references X and Y even without "orange peels." and the examiner deems the affidavit to be persuasive. Accordingly, the examiner determines that claim 2 defines over references X and Y and the remainder of the art.

Resolution of the recapture issue:

Claim 2 would be barred by recapture. The limitation omitted in the reissue is "orange peels." This provides a broadening aspect to the reissue claim that was clearly argued in the original application to overcome the rejection based on references X and Y. Thus, omission of "orange peels" is related to subject matter surrendered in the original application. This is the fundamental case of recapture. Since recapture exists, claim 2 should be rejected under 35 U.S.C. 251 based on recapture in the manner set forth above under the heading "Rejection based upon recapture:".

In this example, applicant narrowed the claims for the purpose of obtaining allowance in the original prosecution, and applicant is now precluded from recapturing subject matter previously surrendered. See also *Mentor Corp. v. Coloplast, Inc.*, 998 F.2d 992, 994, 27 USPQ2d 1521, 1524 (Fed. Cir. 1993) with respect to this example. (In *Mentor*, there were narrowing limitations added to the reissue claims that did not serve to materially narrow the claims in a manner effective to avoid a recapture bar; however, those narrowing limitations are not included in this example of fundamental recapture.)

Example 2- Recapture based upon applicant's statement made during the original prosecution:

Original prosecution:

An application was filed containing only one claim reciting:

Claim 1: A bread baking oven for baking bread using only steam comprising:

a chamber;

means passing a continuously running conveyor belt through the chamber to expose bread in the chamber only to steam as the sole baking medium;

and means providing two sources of steam to bake the bread:

one being a source of steam comprising a pool of water within the chamber with heating means for boiling the water to create steam,

and the other a steam generator supplying supplemental steam into the chamber to maintain the atmosphere, together with the first steam source, at near 100% humidity, 100 degrees C. and a pressure above atmospheric.

During the prosecution of the original patent, the examiner repeatedly rejected claim 1 based upon prior art references X and Y which together teach the claimed oven. Applicant repeatedly replied with the argument that **baking solely with steam** and the **two sources of steam** limitations distinguished claim 1 from references X and Y, and that each of these limitations are critical to patentability. Applicant did not amend the claim, and ultimately applicant appealed to the Board of Patent Appeals and Interferences. In the appeal, applicant again relied upon the argument of **baking solely with steam** and the **two sources of steam**. The Board reversed the examiner, and the examiner passed the application to issue. A patent issued on the application.

Reissue proceedings:

In a reissue application, claim 2 is newly presented containing the same language as in claim 1 except that it does not contain the requirement that **the baking be solely with steam**, and does not require that the steam be generated via **two sources of steam**.

The reissue oath points out that the presentation of only a claim which included these two limitations was "error" by the attorney in failing to recognize the full scope of the invention.

During the prosecution of the reissue application, the examiner is persuaded that claim 2 defines over the prior art.

Resolution of the recapture issue:

Claim 2 is barred by recapture.

In this example, reissue claim 2 is broader than patent claim 1 by the omission of two limitations, **baking solely with steam** and **steam generation via two sources of steam**. Applicant surrendered the claim scope for a bread baking apparatus which omits these two limitations because applicant repeatedly argued during prosecution of the original application (including on appeal) that these two limitations distinguished original claim 1 from references X and Y and that each of the limitations was critical to patentability. These repeated arguments constitute an admission by applicant that the two limitations were necessary to overcome the prior art. Thus, claim 2 is broader than the original application claim in an aspect relevant to prior art rejection and related to the surrendered subject matter. Accordingly, impermissible recapture exists, and claim 2 should be rejected under 35 U.S.C. 251, based upon recapture.

Impermissible recapture exists in this example even though applicant never amended the original application claim to add **baking solely with steam** and **steam generation via two sources of steam**; the two limitations were present in the originally presented claim of the application. Subject matter can be surrendered by way of arguments or by claim amendment made during the prosecution of the original patent application. In the present example, applicant's argument provided the basis for a finding of surrender of subject matter.

A similar situation arose in *Hester Industries, Inc. v. Stein, Inc.*, 142 F.3d 1472, 46 USPQ2d 1641 (Fed. Cir. 1998). In *Hester*, however, the reissue claims also included narrowing limitations added via the reissue that did not serve to materially narrow the claims in a manner effective to avoid a recapture bar; those limitations are not included (presented) in this example, since they are not directed to the focus of the example.

Example 3- Reissue broadens, but the broadening is not related to the prior art rejection-No recapture:

Original prosecution:

As in Example 1, an application was filed containing only one claim reciting:

Claim 1: A bread containing chocolate, pepper, and tomatoes, which provide a unique taste to the bread.

During the prosecution, the examiner issued an Office action rejecting claim 1 based upon references X and Y which together teach a bread having chocolate, pepper, and tomatoes.

In an amendment replying to the Office action, applicant added (from the specification) "orange peels" to claim 1 and argued that this amendment overcame the rejection based on references X and Y, in that it provided a sweetness to the bread. The amended claim recited:

Claim 1 (once amended): A bread containing chocolate, pepper, tomatoes and orange peels, which provide a unique taste to the bread.

The examiner allowed the claim and passed the application to issue. A patent issued on the application.

Reissue proceedings:

In a reissue application, new claim 2 is presented.

Claim 2: A bread containing chocolate, tomatoes and orange peels, which provide a unique taste to the bread.

New claim 2 does not include the "pepper" of claim 1 of the original application. The reissue oath points out that limiting the bread to a pepper-containing bread (in the patent) was "error" upon which reissue may be based; thus, claim 2 which omits "pepper" is added in the reissue application. The oath points out that the error arose because applicant's attorney incorrectly assumed that bread with pepper was the only thing applicant was interested in producing.

The examiner determines that claim 2 defines over references X and Y and the remainder of the art, even without the pepper limitation.

Resolution of the recapture issue:

Claim 2 would be not barred by recapture. The limitation omitted in the reissue is "pepper." This provides a broadening aspect to the reissue claim that was never argued in the original application to overcome the rejection based on references X and Y. Thus, omission of "pepper" is not related to subject matter surrendered in the original application; a bread omitting pepper was never surrendered.

Regarding this example, see *Ball Corp. v. United States*, 729 F.2d 1429, 1436, 221 USPQ 289, 295 (Fed. Cir. 1984).

Example 4(a)- Reissue narrows & broadens, where the broadening is related to the prior art rejection and the narrowing is not-Yes recapture:

Original prosecution:

As in Examples 1 and 3, an application is filed containing only one claim reciting:

Claim 1: A bread containing chocolate, pepper, and tomatoes, which provide a unique taste to the bread.

During the prosecution, the examiner issues an Office action rejecting claim 1 based upon references X and Y which together teach a bread having chocolate, pepper, and tomatoes.

In an amendment replying to the Office action, applicant added (from the specification) "orange peels" to claim 1 and argued that the amendment overcame the rejection based on references X and Y. The claim now recites:

Claim 1(once amended): A bread containing chocolate, pepper, tomatoes and orange peels, which provide a unique taste to the bread.

The examiner allowed the claim and passed the application to issue. A patent issued on the application.

Reissue proceedings:

In a reissue application, a new claim (i.e., claim 2) is presented for a bread containing chocolate, **diced green bell peppers** and tomatoes, which provide a unique taste to the bread. This reissue claim does not contain the "orange peels" that defined over references X and Y in the application. It does, however, require that the pepper be "diced green bell peppers" (unlike the case of example 1). The "diced green bell" limitation of the "pepper" is a limitation which was overlooked in the prosecution of the patent, and-as such, constitutes "error" upon which reissue may be based. The examiner determines that newly presented claim 2 defines over references X and Y and the remainder of the art, based upon the "diced green bell peppers".

Resolution of the recapture issue:

Claim 2 would be barred by recapture. The limitation omitted in the reissue is "orange peels." This provides a broadening aspect to the reissue claim that was clearly

argued in the original application to overcome the rejection based on references X and Y. Thus, omission of "orange peels" is related to subject matter surrendered in the original application. A narrowing limitation was also provided in reissue claim 2; i.e., a limitation that limits the "pepper" to "diced green bell peppers." This narrowing limitation, however, is not at all related to the "orange peels" and the manner in which it defined over the art. Since the narrowing is not related to the prior art rejection and not related to the subject matter surrendered in the original application (omission of orange peels), recapture exists and claim 2 should be rejected under 35 U.S.C. 251.

See *In re Clement*, 131 F.3d 1464, 45 USPQ2d 1161 (Fed. Cir. 1997).

Example 4(b)- Reissue narrows & broadens where both are related to prior art rejections (different ones)-Yes recapture:

Original prosecution:

An application was filed containing only one claim reciting:

Claim 1: A method of treating bread dough to remove seed contaminants contained therein, which comprises:

- (a) forming a flowing dough;
- (b) irradiating the dough to soften the seeds at a temperature above room temperature; and
- (c) adhering the softened seeds to a membrane at a temperature below room temperature and then recovering the dough.

During the prosecution, the examiner issued an Office action rejecting claim 1 based upon references X and Y which together teach steps (a)-(c). Claim 1 was also rejected based upon reference Z which teaches steps (a)-(c) in a somewhat different manner (than references X and Y do).

In an amendment replying to the action, applicant added "101 and 115° C." to step (b) of claim 1, and 5-15° C. to step (c), in place of "a temperature above room temperature" and "a temperature below room temperature," respectively. Applicant argued that the temperature additions define the claim over references X and Y. Applicant also added new step (d) to claim 1, reciting the collecting of the seed-free dough while mixing and irradiating it. Applicant argued this addition to define the claim over reference Z.

The claim now recites:

Claim 1 (once amended): A method of treating a bread dough to remove seed contaminants contained therein, which comprises:

- (a) forming a flowing dough at room temperature;

(b) irradiating the dough to soften the seeds while heating the dough to between 101 and 115° C.;

(c) adhering the softened seeds to a membrane at a temperature of 5-15° C. and then recovering the dough; and

(d) collecting the seed-free dough while mixing and irradiating the dough.

The examiner allowed the claim and passed the application to issue; a patent then issued on the application.

Reissue proceedings:

In a reissue application, claim 2 is now presented containing the same language as in claim 1 except that it does not contain the "101 and 115° C." and 5-15° C." limitations that defined over references X and Y in the application. Added to claim 2 step (d) is the limitation "in a vacuum," so that step (d) now recites-

(d) collecting the seed-free dough in a vacuum while mixing and irradiating the dough.

The reissue oath points out that the presentation (in the patent) of only a claim which included the two temperature limitations was "error" upon which reissue may be based; thus, claim 2 which is free of the temperature limitations is added in the reissue. The reissue oath additionally points out that "in a vacuum" is added because it further defines over reference Z.

The examiner determines that claim 2 defines over references X, Y and Z and the remainder of the art.

Resolution of the recapture issue:

Claim 2 would be barred by recapture:

In this example, reissue claim 2 is both broader and narrower than patent claim 1 in areas relevant to the prior art rejections.

Comparing reissue claim 2 with patent claim 1, claim 2 is narrower in one aspect, namely, the step (d) dough collection "in a vacuum." This narrowing relates to a prior art rejection because, during the prosecution of the patent, applicant added step (d) to overcome reference Z.

Reissue claim 2 is broader in that it eliminates the "101 and 115° C." and 5-15° C." temperature limitations. This provides a broadening aspect to the reissue claim to exclude the temperature limitations that were clearly argued in the original application to overcome the rejection based on references X and Y.

Reissue claim 2 is broader in a manner *directly pertinent to the subject matter that applicant surrendered* during the prosecution (i.e., the method of treating the bread

dough to remove seed contaminants, absent the "101 and 115° C." and 5-15° C." temperature limitations).

The narrowing aspect of reissue claim 2 (requiring a "vacuum") relates to a prior art rejection because, during the prosecution of the patent, applicant added the dough collection limitation (d) in an effort to overcome reference Z. The narrowing does not, however, relate to the prior art rejection which applicant dealt with in the original prosecution by adding the "101 and 115° C." and 5-15° C." temperature limitations (thereby making the temperature limitation surrender). Accordingly, the narrowing limitation cannot save claim 2 from the recapture doctrine.

Since recapture exists, claim 2 should be rejected under 35 U.S.C. 251 as being a recapture.

See *In re Clement*, 131 F.3d 1464, 45 USPQ2d 1161 (Fed. Cir. 1997).

Example 5- The reissue both broadens and narrows by newly presenting a separate species-Yes recapture

Original prosecution:

The original application claim recited:

Claim 1: A bread containing chocolate, pepper, and tomatoes, which provide a unique taste to the bread.

The specification disclosed that citrus fruit peels provide added texture to the bread. Examples were provided in the specification where "orange peel" and "lemon peel" are used for texture. Note, however, that citrus fruit peels were not included as a component of the only claim in the case.

In the amendment replying to the Office action, applicant added "orange peels" to claim 1. Applicant argued that "orange peels" define the claim over references X and Y, because the orange peels make the bread sweeter. The amended claim recited:

Claim 1 (once amended): A bread containing chocolate, pepper, tomatoes and orange peel, which provide a unique taste to the bread.

Reissue proceedings:

In a reissue application, new claim 2 is presented for a bread containing chocolate, pepper, ~~lemon~~ peel and tomatoes, which provide a unique taste to the bread. The lemon peel is argued to provide softness to the bread. This reissue claim (claim 2) does not contain the "orange peel" that defined over references X and Y in the application. It does, however, require "lemon peel." Both "orange peel" and "lemon peel" are disclosed species of "citrus fruit peel," and the inclusion of a claim to the second disclosed species (the "lemon peel") was overlooked in the prosecution of the patent. Such constitutes "error" upon which reissue may be based. The examiner determines that newly presented claim 2 defines over references X and Y, and the remainder of the art, based upon the "lemon peel."

Resolution of the recapture issue:

Claim 2 is barred by recapture. The limitation omitted in the reissue is "orange peel," and omission of "orange peel" is related to subject matter surrendered in the original application. The presence of the "orange peel" limitation and the resultant sweetness argued in the original application became an integral part of the claim, and a bread absent the "orange peel" limitation and the resultant sweetness has been surrendered. Claim 2 has the alternative species "lemon peel," but it omits the "orange peel" limitation with its resultant sweetness. Accordingly, even though claim 2 is narrower in that it requires the lemon peel limitation, there is impermissible recapture, and claim 2 should be rejected under 35 U.S.C. 251, as such.

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The above examples provide guidance in common fact situations involving recapture issues which may arise. Where variants of these fact situations arise for which the examiner is unsure of their resolution, the Special Program Examiner(s) of the Technology Centers should be consulted.

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